A CROSS-SECTIONAL STUDY ON THE PREVALENCE OF HEALTH PROBLEMS AMONG INMATES OF OLD AGE HOMES IN NORTH ZONE OF CHENNAI - 2012.

Dissertation submitted to

THE TAMILNADU DR. MGR MEDICAL UNIVERSITY

In partial fulfillment of the requirements for the degree of

M.D. BRANCH XV

COMMUNITY MEDICINE

THE TAMIL NADU Dr. MGR MEDICAL UNIVERSITY,

CHENNAI, TAMILNADU

APRIL – 2013

CERTIFICATE

This is to certify that the dissertation entitled "**A Cross Sectional Study on the Prevalence of Health Problems among Inmates of Old Age Homes in North Zone of Chennai, 2012**" is a bonafide work done by **Dr.D. Jaiganesh** Post Graduate student in the Institute of Community Medicine, Madras Medical College, Chennai, under my supervision and guidance towards partial fulfillment of the requirement for the degree of **M.D.BRANCH XV COMMUNITY MEDICINE** and is being submitted to The Tamilnadu Dr.M.G.R. Medical University, Chennai.

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ACKNOWLEDGEMENT

I gratefully acknowledge and sincerely thank **Dr.V. Kanagasabai, M.D.,** Dean, Madras Medical College, Chennai for granting me permission to carry out the study.

I am deeply indebted to **Dr.V.V. Anantharaman, B.Sc.,M.D., MBA., DPH., D.D,** Director, Institute of Community Medicine, Madras Medical College, who has been the guiding force behind my study with constant encouragement and perseverance, which has helped me in the successful completion of this study.

I have no words to express my gratitude to **Dr. A. Chitra, M.D.,** Assistant Professor, Institute of Community Medicine, Madras Medical College, who has been a constant source of inspiration of and who has helped me by extending his knowledge and experience.

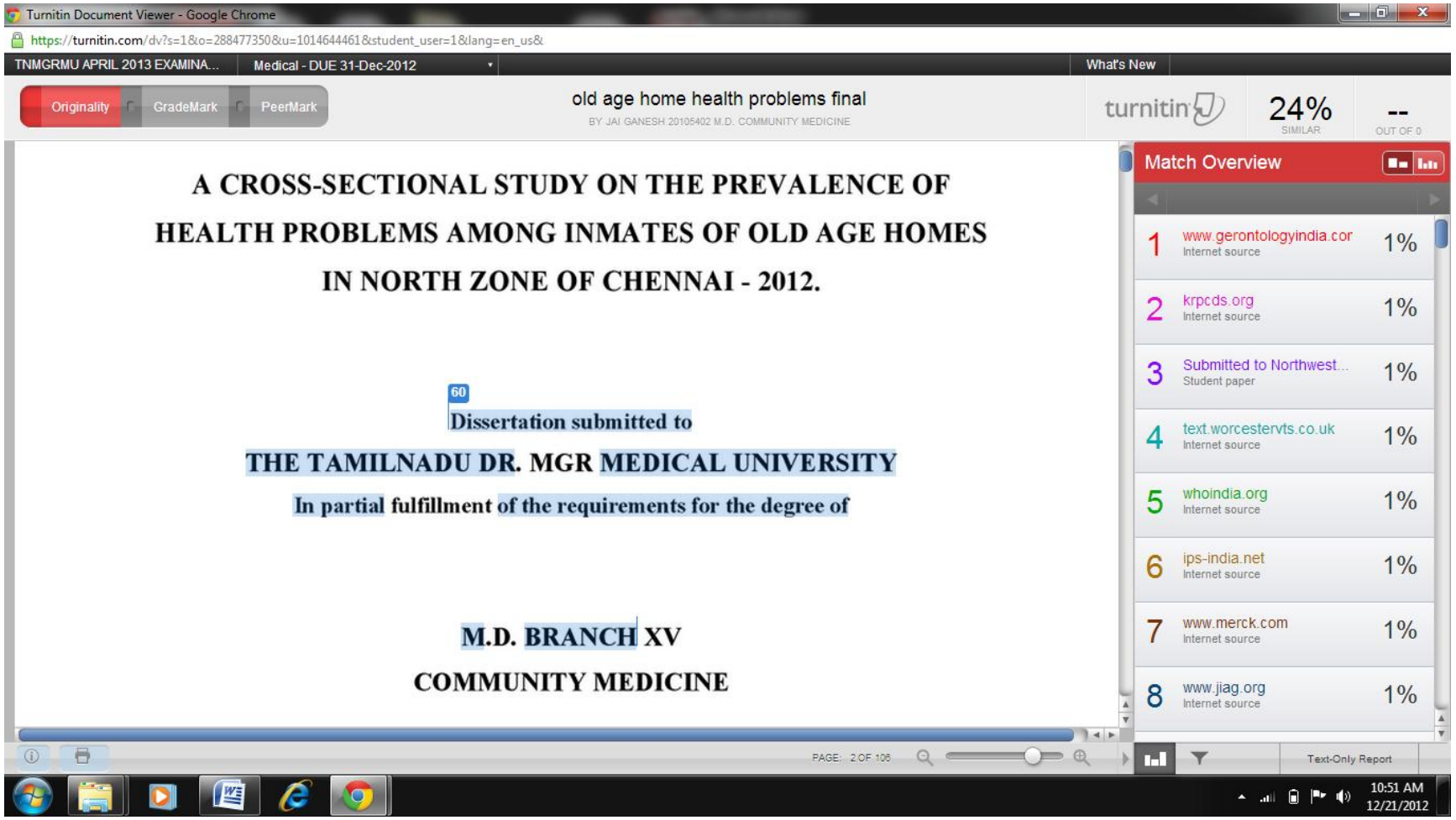
My sincere thanks to **Dr. V.S. Natarajan,** Retired Professor, and Head of the Department of Geriatrics, Madras Medical College, for the timely help rendered by him during the initial phases of the study.

I extend my sincere gratitude to **Dr. B. Krishnaswamy, M.D.,** Professor and Head of the Department of Geriatrics, Madras Medical College, for his valuable suggestions and advice which was extended during the course of this study.

I am grateful to **Mr. Anbazhagan,** Director, and **Mr. Muthukrishnan,** Counselor, Help Age India, Chennai, who was of immense help for providing logistic support.

I wish to thank all the faculty, friends and my family for their continuous encouragement and moral support during the study period.

With due respect, I would like to thank the elders and the management of old age homes for their cooperation during the study, without whom this study would not have been possible.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LIST OF ABBREVIATIONS

1. ADL - Activities of Daily Living
2. BMI - Body Mass Index
3. BP - Blood Pressure
4. BPL- Below Poverty Line
5. DNA - Deoxy Ribonucleic Acid
6. GDS - Geriatric Depression Scale
7. ENT - Ear, Nose and Throat
8. IADL- Instrumental Activities of Daily Living
9. ICMR - Indian Council Medical Research
10. JNC - Joint National Committee
11. LMIC - Low and Middle Income Countries
12. NFHS - National Family Health Survey
13. NHANES - National Health and Nutrition Examination Survey
14. NPOP - National Policy on Older Persons
15. NSS - National Sample Survey
16. NSSO - National Sample Survey Organization
17. OPD - Out Patient Department
18. SD - Standard Deviation
19. SRS - Simple Random Sampling
20. SPSS - Statistical Package for Social Science
21. SSLC- Secondary School Leaving Certificate
22. WHO - World Health Organization

Abstract:

Introduction: Ageing is a normal, inevitable, biological and universal phenomenon. In 2011, India constitutes of 91 million of elders and expected to increase 177 million in 2025. In this present world the care of the aged is slowly shifting from the family to community. The old age homes are being organized in the country to give shelter and care to elderly people who are financially poor, lacking familial care and for the destitute. **Objectives:** To estimate the Prevalence of Health problems among inmates of Old age homes in North zone of Chennai and the factors associated with the health problems in the above population. **Methods:** A Cross sectional study was done among 450 elders in 24 old age homes in North zone of Chennai during April 2012 to November 2012. Simple random technique was used to select the study subjects. After obtaining clearance from institutional ethical committee, the data was collected using standardized pretested questionnaire after getting consent from the elders. The diagnosis made by clinical examination and it is confirmed by medical records possessed by the individuals. The association between various factors and health problems were analyzed by Chi Square test. **Results**: Young old (60-69 years) constituted the maximum percentage of 47%. Number of females is more than the number of males and most of the elders were from upper lower socio economic status. The prevalence of individual health problems was Hypertension (68%) followed by Visual problems (64%), Depression (43%), Hearing problems (42%), Arthritis (41%) and Diabetes mellitus (30%). The frequency of health check up among known hypertensive's and diabetics was inadequate in all the old age homes. 58% had no eye check up after cataract surgery. Among 42% of elders with hearing problem, only 8% were using hearing aids. **Conclusion:** To achieve good health in the old age group special provisions such as periodical camps, free medicines are to be arranged from both Government and Private side. Elders need to be educated regarding their health problems and importance of regular treatment and follow up.

1. INTRODUCTION

"Forty is the old age of youth; fifty is youth of old age."- a French phrase meaning that natural process of waxing and waning of the body ageing which start at very young age but is visible only in old age.

Ageing is a normal, inevitable, biological and universal phenomenon[1]. It is the outcome of certain structural and functional changes that taking place in different parts of the body as increase in life years. Ageing does not occur in all persons in the same manner and no one knows when old age begins. The biological age of a person is not identical with his chronological age.

WHO defines Old age as "the period of life when impairment of physical and mental functions has becomes increasingly manifested by comparison in the previous period of life".[2]

In 1980, United Nations recommended that 60 years as the age of transition for elderly segment of the population[3]. In most gerontological literature, people above 60 years are considered 'old' and as constituting the 'elderly' section of the population. Old age can be divided in to three categories: Young-old (60-69 years), Old-old (70-79 years) and Oldest-old (80+ years) [4].

There has been an increase in the number of elderly population in all the countries in both proportional and absolute terms. Demographic transition coupled with increasing life expectancy is adding older persons to the world's population[5]. There is decreased mortality due to improved health care services and these leads to increased geriatric population both in developed as well as developing countries.

Globally, the number of persons aged 60 years or over is expected to nearly triple, increasing from 673 million in 2005 to two billion by 2050 [6]. Almost 50% of world's elderly live in Asia, of which 23% live in India.

In India the numbers of elders aged 60 years or more were about 12 million in the beginning of the last century. Between 1901 and 1951, the proportion of population over age 60 years increased marginally from 5 percent to 5.4 percent [7], while by 2011 this had increased to 7.5 percent.

In 2011, India constitutes of 91 million of elders and expected to increase 177 million in 2025 [8]. Kerala, Himachal Pradesh and Tamil Nadu leads the highest burden of elderly population with 11.8%, 10.1% and 10% respectively. This roughly translates to 72 lakh elderly people in Tamil Nadu [9].

In India, the life expectancy has increased significantly in the last few decades. The expectancy of life at birth has shown a rise of more than fifteen years from 49.7 years during 1970 - 1975 to 66 years in 2011[10].

Older persons constitute one of the most vulnerable sections of the society. They are not only physically weak, but also lack economic resources and self-esteemed social status [11]. Most people enter old age in poor health status as a result of deprivation, lifelong exposure to health risks, lack of resources for health promotion and poor access to health services.

A decline in immunity as well as age related physiologic changes leads to an increased burden of non communicable disease among elderly. This is further increased by impairment of special sensory functions like vision and hearing.

Fifty percent of aged Indians have chronic disease and disabilities. According to the report of Planning Commission, the health problems among the elders were Hypertension, Vision problems, Arthritis, Depression and Hearing problems [12].

To focus the attention of the elder persons, the topic of world health day in the year 2012 is “Ageing and Health” with the theme of “Good health add life to years”. The focus is on how good health throughout life can help elderly men and women, lead to a full and productive life and be an invaluable resources for their families and communities.

Ideally elderly persons should live in friendly and comfortable environment that can be provided by the family. But in this present world it is becoming more and more difficult for the family members to take care of the elders. The reason for this may be the changing patterns of the family composition, shift from joint to nuclear family, urbanization, industrialization, financial constraints and migration of the younger people to abroad.

As a result of this, the care of the aged has emerged as an important social problem. The health problems of the elderly in most of the developing countries are aggravated by the lack of social security, inadequate facilities for health care, rehabilitation and recreation.

Inevitably therefore, the care of the aged is slowly shifting from the family to community. Institutionalization of elders should be avoided, but in some cases there is no other option available. For such people, old age homes are necessity.

Many older persons find difficult to live with their adult children than living alone and most of the elders do not have a choice and have to live separately from their adult children. In these circumstances old age homes seems to be the choice for the older persons [11].

The old age homes are being organized in the country to give shelter and care to elderly people who are financially poor, lacking familial care and for the destitute. Old age homes are being established by government and voluntary organizations to care for the aged. With the increasing elder's population, the number of persons institutionalized also will be increasing.

Many studies on geriatric care are population based. Inmates of old age homes constitute an important community in our country but there is lack of adequate information on health problems of elderly in old age homes. So this study was undertaken for exploring the above issues relating to elders in old age homes in North zone of Chennai.

2. OBJECTIVES

1. To estimate the Prevalence of Health problems among inmates of Old age homes in North zone of Chennai.

2. To identify the factors associated with the health problems in the above population.

3. JUSTIFICATION

1. The elderly form 7.5% of our total population in India. India constitutes of 91 million of elders and expected to increase 177 million in 2025.

2. Older persons constitute one of the most vulnerable sections of the society.

3. 50% of elderly population has chronic diseases and disabilities. Most of the elders have more than one health problems.

4. The burden of illness among elderly is mainly due to chronic diseases. So early diagnosis and treatment are necessary to prevent further complications.

5. Isolation in old age homes will greatly influence the health status of the individual. This will lead to more morbidity among elderly population.

6. Studies of health problems of the elderly are essential because their population increases every year along with the health problems they face.

7. A thorough examination of geriatric problem and related risk factors are required to improve the health care of elders.

8. Good planning and policy making depends on adequate and appropriate information of health problems.

9. Majority of available studies has been either hospital based or community based, only few studies were conducted in old age homes.

10. Regarding the prevalence of health problems in old age homes in Chennai, only few studies are available.

4. REVIEW OF LITERATURE

4.1: Old age homes: Current scenario in India

India, like many traditional societies, today faces a unique problem in providing care for the elderly persons as the existing old-age support structures in the form of family, kith and kin are vanishing and the elderly are not capable of living alone during the face of disability and infirmity. The responsibility of caring for elderly is now much more on the state than its family members, which necessitate the importance the creation of adequate institutional support [13].

There are two types of old age homes in India, namely the free old age homes and the paid old age homes. The first old age home was established in Trichur district, Kerala in 1890. Over the last few decades, there has been a progressive increase in both the number and proportion of the old age homes in India.

There are about 1018 old age homes in India. Out of these, 427 old age homes are free, 153 old age homes are on payment basis, 146 homes have both free as well as payment basis and detailed information is not available for remaining 292 homes. Majority of the old age homes are situated in the developed states of India[14].

Considering the changing scenario for the care of older persons, the Government of India formulated a National Policy for aged persons in 1999, which has identified the principal areas of intervention and action strategies. These include financial security for elders, shelter and housing, health care and nutrition and development of trained manpower to meet the special health care needs for the elders.

The goal of the policy is the well being of older persons. It aims to strengthen their legitimate place in the society and help older persons to live their lives with purpose, dignity and peace. The construction of old age homes and multi-service centers for elders through special financial assistance to voluntary organizations has also been articulated in the above policy.

The key elements of the policy includes [15],

1. Expanded old age pension scheme

2. Legislation on parent's right to be supported by their children

3. Increase in standard tax reduction

4. Regulatory authority to monitor the pension funds.

5. Subsidized health care network

In a study conducted in 25 old age homes in Gujarat reported the criteria for admitting an elderly person in old age home were person at least 60 years old, who are able to pay the institutional charges, religious affiliation, destitute, no one to give care, no economic support, able to take care of self, free from any diseases and in good physical and mental health[13].

Regarding the medical facility available in old age homes Das et al[13] showed that 36 % do not have any health facility or regular visit by doctor, 20% of the old age homes have access to hospital facility, 20 % have full-time doctors and 24 % have

part-time doctors. Regarding the leisure time activities, 16% of the old age homes do not have any recreational facilities and 76% do not have facilities for sports & games.

4.2: Need for Institutional facilities

Social, economic and cultural change taking place in developing societies will leave families less able to provide care for the elders and thus leads to an increasing demand for institutional care. Migration by the younger people of the families leads to alter the shape and size of the original household.

In China, Taiwan institutional care has rapidly overtaken family care for the elderly. Institutional care is considered acceptable for elderly person but is seen as an alternative for families [16].

In 1986-87, the National Sample Survey (NSS) data revealed that low percentages of institutionalization was seen among the elderly (0.4% of persons aged 60 years and above in urban areas and 0.7% in rural areas)[16]. The numbers of old age homes were found to be inadequate to accommodate all the elders who are unwanted by their families[17].

The Government of India's national policies on the elderly recommends the establishment of cost free, or pay old age homes and day care centers to cater to persons with diverse economic capabilities. It has been proposed to raise the financial grant for the construction of old age homes from Rs.5,00,000 to Rs.30,00,000 along with the provision of annual maintenance cost [18].

4.3: Concept of Ageing

Ageing is a natural phenomenon faced by every individual in a society. Infancy, childhood and youths are the period of rapid growth and development of an individual with one reaching maximum capacity during the middle age. After that, a slow decline occurs in various capacities of the individual and finally leads to death. As the final stage in the life cycle of an individual, old age requires a special care. For better understanding of this stage, it is important to define ageing.

Ageing can be defined as "a progressive loss and deterioration of physiological capabilities and functions with a decreased viability, and increased vulnerability and probability of death". The age of sixty years is taken as a cutoff point, above which all individuals are known as elderly persons [19].

"Biologically" aging begins at least as early as puberty and is a continuous process throughout the adult life.

"Socially", the characteristics of members of the society who are perceived as being old vary with the cultural pattern and from generation to generation.

'Economically', the elders are defined in terms of retirement from their work force but, especially in society with a normal or statutory retirement age, many individuals stop economic activity for reasons unrelated to aging. And many of those who cease to work continue to contribute indirectly to their society's economy through support to working family members, voluntary work, or deployment of wealth.

‘Chronologically’, age is an indicator of the expected residual life span. Recent changes in the mortality rates have changed the predictive significance of chronological age, and refinement of care objectives has shifted the emphasis from prolonging life expectancy to increasing life expectancy free of disability [20].

Active ageing is the process of optimizing opportunities for health, participation and security in order to enhance the quality of life as people age [21].

4.4: Theories on Ageing

The following theories have been put forward to explain the ageing process [22].

- Genetically determined lifespan encoded in specific genes
- Somatic mutation of genes
- Loss of important genetic material during DNA repair and impaired DNA repair
- Wear and tear of important organs by continuous functioning
- Deprivation and deficiency of important nutrients and oxygen
- Cross linkage of important cellular components
- Accumulation of toxic materials and free radicals and damage of intracellular structure
- Growth hormone deficiency
- Non enzymatic glycosylation of proteins

- Senescence and other genes: senescence factor synthesized by cells inhibit DNA replication and repair which lead to error in metabolism

- Theory of Dysdifferentiation: it is the loss of ability to adapt and respond to appropriate stimuli.

However, none of the above theories were proven beyond doubt and all these have been criticized. Currently ageing is attributed to the evolution of the species.

4.5: Socio demographic aspects of elders

4.5.1: Demographic burden

Global scenario

Globally the population is increasing rapidly, with the rate of growth of ageing population exceeding the general population. The percentage of elderly population in the world is expected to increase rapidly from 9.5 in 1995 to 14.6 in 2025 [23].

By 2025, the number of elderly people is expected to reach more than 1.2 billion. Of these, 840 million living in low and middle income countries (LMIC), where chronic diseases and disabilities are responsible for the majority of the total disease burden [24].

As per United Nations Projection [23], the likely future scenario of world population is shown in Table 1.

Table 1: Global scenario of aged 1995 - 2050

Year	Population in billion	Percentage of aged > 60	Percentage of aged > 80
1995	5.687	9.5	1.1
2000	6.091	9.9	1.1
2025	8.039	14.6	1.7
2050	9.367	20.7	3.4

Among the elderly, the number of people aged 80 and above will increase more rapidly overtime. In both developing and developed countries there will be a rapid increase in the population in the older age segment [25].

Fig 1: Age–Sex structure of world's population in 2010

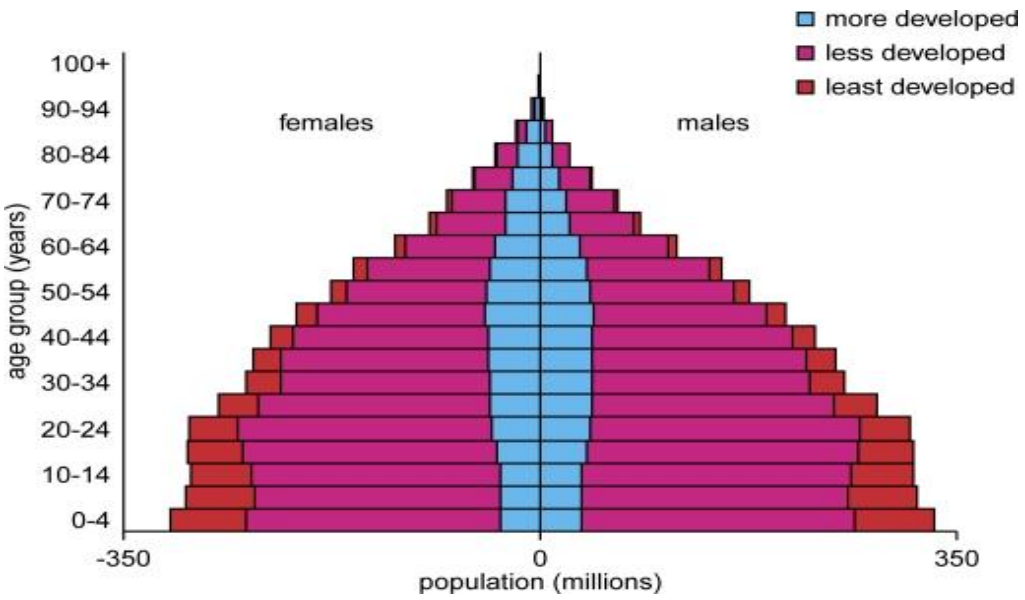
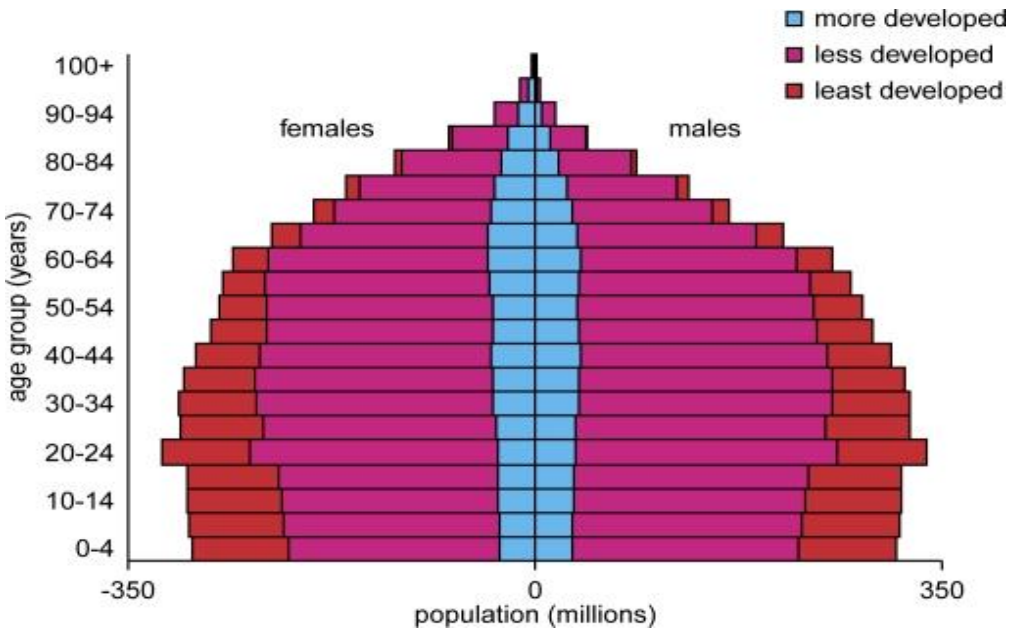


Fig 2: **Age – Sex structure of the world's population in 2050.**



Indian scenario

In India, the proportion of elders has increased from 5.43% in 1951 to 7.5% in 2011 and expected to increase to more than 10% by the year 2021[26]. With current demographic trends it is estimated to reach 21% by the year 2050. The ageing scenario in India presents a gigantic challenge for providing care to the elders, as there are more than 91 million persons aged 60 years and above in the year 2011[9].

Special features of elderly population in India includes: [27]

- 80 percent of elders live in rural area
- Feminization of elderly population (51% would be women by 2015)
- Increase in number of “oldest old”.

Fig 3: India's share of world population

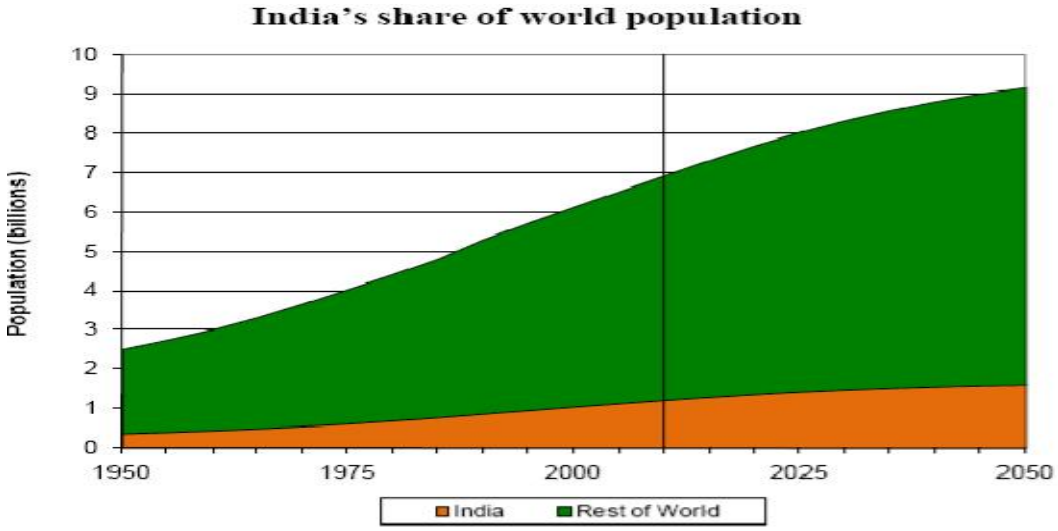


Table 2: India's elderly Population 1990-2010 [28]

Year	60+ (%)	65+ (%)	80+ (%)
1990	6.1	3.8	0.4
1995	6.3	4.0	0.5
2000	6.7	4.2	0.5
2005	7.0	4.6	0.6
2010	7.6	4.9	0.7

4.5.2: Life expectancy

Life expectancy has increased significantly in the last few decades. In India with improvement in medical and health facilities, there has been a decrease in the mortality and increase in life expectancy at birth. The life expectancy of the Indian people during the year 2011 was 67 years [9], which is an average of 4.5 years increase per decade since 1950.

Table 3: Life expectancy at birth, India (1951- 2011)[1]

Year	Male	Female
1951	32.45	31.66
1961	41.89	40.55
1971	46.40	44.70
1981	50.90	50.00
1991	58.10	59.10
2001	62.80	63.80
2011	66.08	68.08

This increasing trend is likely to persist in the coming years and in the next fifty years. In 2002, 8% of the elderly population was in the age group of 80 years and above and it is expected to increase 15% of the total elderly population in the year 2050. Life expectancy at birth may well surpass 80 years in most of the countries in the world, including India [29].

4.5.3: Sex ratio

According to Population Census, the sex ratio among the elders was high as 1028 in 1951, subsequently dropped to about 930 in1991 but has increased again to about 963 in 2011 and projected to become 1031 by the year 2016 [26].

A relatively higher ratio of females to males in the elderly population than in the general population has been seen since independence. This indicates the feminization of ageing in India.

4.5.4: Literacy

In India, literacy rate has increased between 1961 and 2011 in the general population and in the population aged 60 years and above. In 2007-08, only 50% men and 20% of women aged 60 years or more were literate through formal schooling[26]. Uddin et.al [30] in their study found that 45% of elderly were illiterate and 30% of elders had studied up to secondary school leaving certificate (SSLC), of which only 8% could read. Chanana et al [31] found that two-thirds of the elderly males and 90-95 per cent of the elderly females were illiterates in their study.

4.5.5: Employment

Majority of the elderly persons are out of the work force, which shows that there is increasing risk for them to become totally or partially financially dependent. It is also important to note that a majority of the elderly persons in the rural areas are working in unorganized sectors and not being covered by any social security program [32].

Ahmed et al [33] showed that 31% of elders were employed. 38% elders were chronically deficit in annual income and expenditure. Munsur et al [34] found that majority of women were widowed (63.9%) and 76 % were economically dependent.

Zimmer et al [35] concluded that it is essential to have high individual socioeconomic status for better functional status and survival of the elders.

4.5.6: Marital status

Older persons with intact marriages tend to have higher levels of survival and better mental health, utilize more health services and have a better life satisfaction than those without partners [36]. About 51% of Indian women above 60 years of age were widows, as compared to men only 20% were widowers [37].

A study in three old age homes for the elderly in Pune city, found that 81% of women were widows [38]. Widowhood is higher among women because they live longer and marry men much older than them.

4.6: Living arrangements prior to institutionalization

Nearly one third of elders are not living with their families in our country. The National Sample Survey (NSS) in the year 1986-87 has found that 8% of urban and 5.9% of rural elderly population were lived alone. Jasmeet et al [11] found that most of the elders live in joint family with their married son and the rest of the older persons either live alone or with spouse.

More than 75% of elderly males and 40% of elderly females live with their spouse and 20% of elderly males and about half of the elderly females live with their children prior to institutionalization [26].

Living arrangements of elderly people are influenced by various factors like gender, socio economic status, health status, presences of disabilities, etc. Availability of caregivers during the period of illness, disability, or emergency depends on their living arrangements.

4.7: Substance abuse

Gupta et al [39] observed that tobacco and alcohol use are serious public health problems in many countries including India. Smoking causes a spectrum of diseases, many of which could result in death. There are about 50 related diseases that are caused, increased or exacerbated due to smoking.

Goswami et al [40] reported that the prevalence of smoking was 71.8% in men and 41.4% in women. Among men, 41.5% were light smokers (≤ 5beedis/day), 42.9% were moderate smokers (6-20 beedis/day) and 15.6% were heavy smokers (>20 beedis/day). Regular intake of alcohol was seen in 16.3% of men compared to 0.8% of the women.

Schoem [41] reported that 12.6% of elderly males in five colonies in Delhi have alcohol dependency problems. A study by Kokila Selvaraj [42] found that, 38.7% of elders were smokers and 17.6% consume alcohol.

4.8: Health problems

The National Sample Survey report of 2004 shown that

1. The burden of morbidity in old age is enormous

2. Non communicable diseases (lifestyle related and degenerative) are extremely common in older people irrespective of socio-economic status

3. Disabilities are very frequent which affect the functionality in old age compromising the ability to pursue the activities of daily living.

The diseases which contribute significantly to the morbidity in old age includes Hypertension, Coronary heart disease, Stroke, Cataract, Arthritis, Depression, Dementia and Cancer [7].

A study carried out at the geriatric clinic of All India Institute of Medical Sciences (AIIMS), New Delhi [7], by following up 1586 ambulatory individuals over a period of 5 years found that the common health problems were hypertension (39.53%), visual problem (35.3%), Arthritis (33.67%), Coronary heart disease (19.92%), Benign prostatic hypertrophy (16.23%), Diabetes (15.23%) and Depression (8.5%).

A multi centric study conducted by Srivastava et al [43] found that the health problems among elderly were Poor Vision (45.4%), Hypertension (38.2%), Arthritis (36.1%), Bowel complaints (31.6%), Depression (23.6%), Difficulty in Hearing (20.5%), Urinary complaints (13.4%) and Diabetes (13.3%).

Sivaraju et al [44] revealed that the factors which influence the acute health status were educational status, economic status, age, marital status, addictions, anxiety, type of health centre visited and whether or not taking medicines etc.

Most of the available data in India is hospital based and there is limited number of published material on community based studies.

4.8.1: Hypertension

Among the health problems that threaten the life of elders, hypertension plays a leading role. Nevertheless stroke episodes and heart failure occur in association with old age and rising levels of blood pressure [45].

Many cross sectional studies found that blood pressure, particularly systolic blood pressure increases with increasing age. According to WHO [46] Technical Report Series, it has been stated that blood pressure increases with age in both young & older adults but observed a decrease in blood pressure among males aged 75 years and above because of less mental tension and less responsibilities at home.

Prevalence of hypertension varies widely in literature. Master et al reported a blood pressure of more than 160/95 mm Hg in 30% of elders in the age group of 65-74 years and 65% in the age group of 75 years an above.

Chandrashekara et al [47] reported that the prevalence of hypertension among elderly was 41.6%. Hypertension was most prevalent, and significantly more in females (46.4%) than in males (34.9%).

Agarwal et al[48] reported that the prevalence of hypertension among elders was 42.1%. Hypertension was more prevalent in urban population and also increasing in rural population. It's more common in females than males.

In a study conducted by Elango et al [49] among the geriatric population, the prevalence of hypertension was 18.5%. Among the hypertensive's, 25% of elders are symptomatic but not taking any treatment because of ignorance, illiteracy and poverty.

Moharana et al [50] showed that half of the elderly (51%) was hypertensive. Of those, 41% of elders were overweight (BMI $\geq$25 kg/m^2). Strulov et al [51] found that, hypertension in the elderly was a major risk factor for several diseases which includes stroke, myocardial infarction, etc.

4.8.2: Diabetes Mellitus

Diabetes mellitus is a chronic illness due to faulty carbohydrate metabolism. It is predicted that by the year 2025, India, China and United States will lead the world in the number of persons with diabetes. In United States, the National Health and Nutrition Examination Survey (NHANES III) study observed that about 18% of people aged 60 years and above have diabetes [52].

Moharana et al [50] showed that 36% of elders had Diabetes mellitus. Kutty [53] reported a prevalence of diabetes was 13.7% in persons aged 60 and above and increasing prevalence with age in Southern Kerala. Another study [54] in India reported that, the prevalence of diabetes was 36% in the age group of 65-74 years and 42% in 75-79 years of age.

In a study by Siddhartha Das et al [55] at Bhubaneswar, found that the prevalence was 20% in the age group of 65 years and above. Valverde et al [56] reported that there was no difference in the prevalence of diabetes between the urban and rural populations.

Adler et al [57] reported that each 10 mm Hg decrease in mean systolic blood pressure was associated with reduction in risk of 12% for any complication due to diabetes and 15% for death related to diabetes.

Perry et al [58] reported that more than 90% of diabetes can be prevented if proper attention is given on diet, physical activity, smoking and consumption of alcohol.

4.8.3: Visual problems

As age increases, eye sight deteriorates steadily and almost everyone over the age of 60 years uses spectacles. With regular vision tests, surgery, suitable spectacles, drugs and special visual aids, majority of elders can maintain a good eye sight and lead an independent life [59].

Rajiv Khandekar et al [60] reported that, the prevalence of blindness and vision impairment was 37.4% and 36.0% respectively. The blindness was significantly higher in females and Cataract was the principal cause in 50% of the blind.

J R Evans et al [61] showed that the prevalence of visual impairment and blindness increase sharply as age increases. Indian Council Medical Research (ICMR) study results showed that, the prevalence of visual disability was 29.5% and hearing

disability was 12.5% among the elderly population [62]. The number of elderly blind persons was around one million in the year 1996, which was ten times more than the prevalence among the general population [63].

Studies in Nigeria and India [64,65] found that most of the blindness in the geriatric age group was due to avoidable or preventable causes, mainly unoperated cataract. Cataract was the main eye problem and major cause of disability among elderly population. The combined proportion of blindness and visual impairment was very high (31.5%) among the elderly population[66].

4.8.4: Arthritis

In 1986, National Sample Survey Organization (NSSO) mentioned that, joint problems were the commonest health problem among elders. Of which, Osteoarthritis accounts for more than 90%. The risk factors for Osteoarthritis of knee joint include age, female gender, Obesity, a history of knee surgery, significant trauma and having an occupation requiring heavy lifting[67,68] .

Sharma et.al[69] observed that the prevalence of Osteoarthritis was 56% in rural area. It was more in females compared to males. Osteoarthritis was significantly associated with overweight.

Grag et al [70] found that the prevalence of arthritis among the elderly was 13.2%. Krishnamachari Srinivasan [71] showed that arthritis was common among women than males. Diabetes and Hypertension was significantly associated with arthritis in both genders.

Shahar et al [72] reported arthritis and gout (45%) was the major chronic diseases, followed by hypertension (22.9%) among elders. Gibson et al [73] reported that rheumatoid arthritis is the commonest problem among elderly.

4.8.5: Hearing problem

Hearing tends to deteriorate naturally, as age increases. It may not be noticeable until about 60 years of age. As per WHO report, the prevalence of hearing difficulty increased from 20% in the age group of 60-64 years to 60% in the age group of 85-89 years[52]. In India nearly 3% of people above the age of 65 years are having some degree of hearing loss [74].

In a study conducted by Elango et al [49] showed the prevalence of hearing loss was 9%. In a study by Kacker SK[75], about 60% of the elderly population suffers from hearing impairment, which is nine times higher compared to the prevalence rate in the general population.

Rajiv Khandekar et al [60] reported that the prevalence of hearing impairment was 33.5% and deafness was 3.6%. Nilesh Agrawal et al [76], in their study showed that, the hearing impairment was an independent risk factor for mortality in people aged 70 years and above. Surekha Kishore[77] observed that hearing aids are underutilized by the elderly population.

4.8.6: Depression

Rajkumar et al [78] found that the prevalence of any depressive episode among elderly was 12.7%. Among them 3.2% had mild, 7.6% had moderate and 1.9% had

severe depressive episode. Sandhya et al [79] reported that the prevalence of depression was 25.4% and illiteracy was significantly associated with depression.

Jeung-Im Kim et al [80] showed the prevalence of depression was 63% in geriatric population. Of the elderly, 21% had severe Depressive symptoms. The depression was higher in women than in men. David C et al [81] estimated the prevalence of major depression was 20.4% in elderly women and 9.6% in elderly men.

Ankur Barua et al [82] found that low socioeconomic status, loss of spouse, living alone, chronic co-morbidities and restricted activities of daily living were the modifiable risk factors for depression in geriatric population. Jariwala Vishal et al [83] reported that severely depressed elders are more in old age homes (25.71%).

Wijeratne et al[84], reported that the prevalence of depression was found to be significantly higher among those with chronic diseases, family conflicts and lack of psychological support and there was no significant association with age, lack of financial support, literacy level, marital status and absence of a leisure time activity.

4.9: Duration of stay in old age home

N.P. Das et al [14] reported that about 50% of elders were admitted in old age home by self decision, 30% were admitted by family members, 15% of elders were admitted by friends and neighbors and 5% by social worker. Jasmeet Sandhu[11] et al in their study showed that the duration of stay in old age home was 2 to 5 years for 58% of the elders, 6-10 years for 18% of the elders, 11 or more years for rest of the elders.

4.10: Reason for Institutionalization

In a study done in Punjab old age homes[11] reported that the reasons for institutionalization were conflict with the family members (44%), to lead an independent and peaceful life without any interference (17%), No family members to take care (13%) and did not want to live with their married daughters (9%).

In another study [14] the common reason for institutionalization as stated by the elders were health problem of self or spouse's ill health (45%), not having anyone to take care of them (38%), avoid conflict with the family members (34%), did not want to be a burden on family members (19%) and to live a life of dignity and self respect (11%).

4.11: Financial dependency

India has an inadequate social security provision for its elderly population. The financial dependency of elders was 51.1% as per the finding of National Sample Survey Organization (NSSO) 52nd round [85]. In a study conducted in Chennai, New Delhi and Lucknow it was observed that more than 48% of the elders have no income[86]. Consequent to this, financial dependency is the major problem among elders.

The main personal needs of the elderly in old age homes which required cash were going to hospital, purchase medicines and tea/coffee/tobacco/betel nuts. The responsibility for caring of elderly will fall either on young wage earners or on the Government[87].

For poor, destitute and infirm persons above the age of 60 years, the government of Tamil Nadu provides an old age pension of Rs. 1000 per month.

Regarding the financial dependency of the elderly males 85% was financially supported by their own children, 6-7% by their spouses, 2% by grand children and 6% by others. Of elderly women, more than 70% depended on their spouses, less than 20% on their children, 3% on grand children and 6% or more on others including the non-relatives[26].

4.12: Family contact

About forty percentages of elders had family contact after admitted in old age homes. They had their family relationship with son (42%), daughter (38%), son-in-law (23%) and daughter-in-law (20%). The participation in family ceremonies was very rare among elderly living in old age homes. The reasons for not participating in family ceremonies were no respect, not invited and not given importance[88].

4.13: Activities of daily living

As age advances, a physical and biological function of the body is likely to deteriorate which leads to physical and sensory impairment and results in variable amounts of disability. WHO[89], described Disability as any restriction or lack (resulting from an impairment) of ability to perform an activity in manner or within the range considered normal for a human. The prevalence of disability increases with increasing age. In United States, about half of the people over age 85 require assistance for one or more Activities of Daily Living [90].

Activities of Daily Living (ADL) index, was contributed by S.T.Katz and his associates [91]. The ADL is most commonly used in studies of the elderly. Katz index of ADL was found to be highly reliable in the elderly in home care and sheltered housing groups.

The Katz index is appropriate for patients in acute or long-term care. ADL include those activities which need self care i.e. eating, dressing, bathing, transfer, toileting and continence.

Fried et al [92] showed disability and functional limitation increased with advancing age and was higher in women than in men. Joshi et al [93] found 87.5% of the elderly having minimal to severe disabilities. Increasing numbers of morbidities was associated with increasing disability and distress.

Jack et al [94] showed physical disability and functional limitation was common in older people leads to dependency and institutionalization. Rao et al [95] showed 68% of elders had at least one functional limitation, 22% had at least one restricted ADL and 36% suffering from at least one IADL.

A study by Dey AB et al [96] reported that 85% of the elderly were independent, 15% had limited dependence and none had total dependence in his/ her ADL.

4.14: Utilization of Health services

Elderly do not seek health care as much as adults and childrens due to various reasons, first of all they don't perceive it as a disease but attribute to natural ageing. Lena et al [97] showed that 35.7% of elders were aware of Government geriatric health services and only 14.6% had utilized the geriatric health services.

A study conducted in Meerut[98], it was found that about half (46.3%) of the elders were unaware of geriatric health services and 96% of them had never utilized any of the geriatric health services.

Studies conducted so far on the utilization of health care services in India have revealed that the elders do not optimally utilize them for various reasons like low literacy level, distance, lack of transportation, custom, lack of money to pay for services and medications[97].

4.15: Social security measures for elders:

Ingle GK et al[8] reported that, the facilities like Social security and Pension was restricted to those who have worked in the public and organized sector of industry which hardly covers about 11% of elders and the majority (89%) remains uncovered with any social security protection. As a result of this, the traditional role of the family is being shared by institutions such as old age homes [99]. Old age pension scheme has been introduced by State Governments for the destitute and infirm elders [87].

4.16: Programmes and Acts for the elderly in India

4.16.1: National Programme for Health Care of Elderly (NPHCE), 2010[100]

It is a centrally sponsored scheme initiated under the eleventh five year plan. The goals of NPHCE is to provide an easy access to preventive, promotive, curative and rehabilitative services to the elderly, to make optimum use of community based primary health care approach and strengthen the capacity of medical and paramedical professionals, to provide referrals services to the elderly patients through district hospitals and medical colleges, to strengthen health manpower development in the field of geriatric medicine.

4.16.2: Integrated Programme for Older Persons, 1992

The various aspects under this scheme are Maintenance of old age homes, Multi service centre- Mobile Medicare unit, Day care centre for older persons with dementia, Physiotherapy clinic, Disability and hearing aids for elderly, Training of caregivers to older persons, Mental health care and specialized care for vulnerable elderly, Counseling for older persons, Programme for sensitization of school and college students, Multi facility care centre for older widowed women, Voluntary bureau for older persons and Senior citizens association- Self help groups.

4.16.3: Maintenance and Welfare of Parents and Senior Citizen Act, 2007

The objective of this act is to provide more effective provisions for the maintenance and welfare of parents and senior citizens. The basic purpose is to

provide legal rights of receiving maintenance by the parents and the senior citizens from their children and grand children or their relatives.

4.16.4: India Gandhi National Old Age Pension Scheme (IGNOAPS)

Under the scheme, BPL persons aged 65 years and above were entitled to a monthly pension. With effect from 1st April 2011, the eligibility age for pension under this scheme has been reduced to 60 years.

4.16.5: Annapurna scheme, 2000

This new Scheme was launched on 1st April, 2000. This scheme aimed at providing food security to meet the requirement of those senior citizens who, though eligible, have remained uncovered under the National Old Age Pension Scheme (NOAPS). Under this scheme, 10 kg of food grains per month are provided free of cost to the senior citizens.

5. MATERIALS AND METHODS

5.1: Study design

Descriptive Cross -sectional study.

5.2: Study area

Old age homes in North zone of Chennai.

5.3: Study period

April 2012 to December 2012

5.4: Study population

Inclusion criteria: Males and Females aged 60 years and above.

Exclusion criteria: Elders who are not willing to participate.

Elders who are disoriented.

5.5: Sample size

A study done by Kavita Banker et al [101] on 'Study of health profile of residents of geriatric home in Ahmedabad district' reported that Hypertension was the major health problem with the prevalence of 54.2%. This was taken as a basis for the calculation of the sample size for this study as Hypertension is the major public health problem among elders which leads to many complications like Stroke, IHD, Myocardial infarction etc.

At 95% confidence interval, Z alpha = 1.96, P = 54.2%, Q = 45.8%, d allowable error of 9% of 54.5% = 4.87

Using the formula,

$$\text{Sample size N} = \frac{Z_{\alpha}^{2}\, P \times Q}{d^2}$$

$$\text{Sample size N} = \frac{1.96 \times 1.96 \times 54.2 \times 45.8}{4.87 \times 4.87}$$

$$= 402$$

Assuming 10% of non-responsiveness, the sample size was calculated to be 442. Final sample size was **450**.

5.6: Sampling method

Simple Random Sampling (SRS) method was used for the study. Among the three regional zones (North, South and Central) of Chennai Corporation, North zone of Chennai was chosen by Simple random sampling technique using lottery method. The list of old age homes in North zone of Chennai was obtained from Department of Social Welfare, Chennai and Directory of Old Age Homes in India 2008, published by Help Age India.

There are 24 old age homes in North zone of Chennai. These homes were contacted over phone to ascertain their present functional status. Subsequently a letter and mail was sent to the old age homes regarding permission to carry out the study among the inmates.

All the 24 old age homes have given permission to conduct the study. List of the inmates were obtained from all the old age homes. Total strength of people in all the 24 old age homes was 1352 according to the records available with the respective

old age homes. From the 1352 people sampling frame was prepared and the needed sample of 450 was chosen by Simple random method using random table numbers.

5.7: Data collection

The old age home was visited and the heads of the institution was explained about the importance and usefulness of the study. On fixed days, these old age homes were visited. Then the inmates were contacted in person and explained about the purpose of the study and assured the confidentiality of their identity.

After obtaining their informed consent, data was collected by interviewing and clinical examination. The diagnosis made by clinical examination and it was confirmed by medical records possessed by the individuals.

The data was by collected by using semi structured, standardized, pretested questionnaire in Tamil language (local language) from the study subjects. The questionnaire (Annexure X) constructed for this study contains the following parts

Part A: Details regarding the old age homes

Part B: Details regarding the individuals and their health problems.

The questions were standardized to local social and cultural norms, values and religious beliefs. The questionnaire was pretested with 30 elderly persons in the old age home of same zone. Based on the observations made during the pilot testing, necessary changes were made in the questionnaire. The results of the pilot test were not included in the final analysis.

Socioeconomic classification of elders was based on their status prior to institutionalization. Modified Kuppusamy scale was used to assess the socio economic status of the elders (Annexure I).

A Portable weighing machine was used to record the weight of the study subjects. The same machine was used throughout the study. The individual was requested to stand still on the platform of weighing machine, with the body weight evenly distributed between both feet. Weight was recorded in kilograms with minimal clothing and without footwear. The scale was also zeroed before weighing and was also calibrated regularly during the study.

Inelastic measuring tape was used for measuring the height of the elders. The person whose height has to be measured stands against the wall with their back in an erect position without shoes/footwear and also asked them to put their feet together and move back until their heels touch the bottom of the wall, the person was also asked to look straight. The upper limit recorded to nearest single decimal point was taken as the height of the individual. Height and weight was not recorded among elders who could not stand even with support and in conditions like kyphosis and scoliosis.

Body Mass Index (BMI) was calculated according to 'Quetelets' Index which is a relationship between the height and weight of an individual arrived at by dividing body weight (kg) and height in m^2. BMI[102] was categorized as, Underweight <18.50, Normal 18.50-24.99 and Overweight > 25.

Waist circumference was measured using inelastic measuring tape. Waist circumference was measured at the level of halfway between the iliac crest and the costal margin after exhaling, with the subject in standing position. Normal value for men and women was less than 102cm and less than 88 cm respectively[103].

Mercury sphygmomanometer was used to measure blood pressure. BP was measured on the right arm in the sitting posture, after a resting period of ten minutes. For bedridden elders BP was measured in lying posture. Three measurements were taken on each study subject at an interval of minimum 3 minutes each. The lowest value of the recorded BP was considered as the blood pressure of the study subject. The same instrument was used throughout the study and also calibrated regularly during the study. JNC VII criteria[104] were used to classify the blood pressure status of the study subjects (Annexure II).

Diabetes mellitus defined as the elders who were already diagnosed by a physician or if they were on anti diabetic medicine irrespective of their blood glucose level, which were confirmed with medical records.

Arthritis was diagnosed by the presence of swelling or pain in joints, with or without restriction of movements[105]. Vision was tested using Snellen's 'E' chart in a well illuminated room. The person was asked to use spectacles for reading the chart and visual acuity was tested in each eye separately at a distance of 6 meters. If a person could not see the top letter, the perception of light and projection of light rays were tested in all the four directions. Vision in the better eye has been taken as person's visual impairment[76].

Hearing was assessed using Voice test, after ensuring maximum possible silence. The investigator stand 1 meter away from the back of study subject and each ear was tested separately, after giving appropriate instructions[106] (Annexure III). Depression was assessed using Geriatric Depression Scale (GDS) [107](Annexure IV). Katz Index of Daily Living Scale was used for assessing the physical dependency of elders[108] (Annexure V).

5.8: Data analysis

Data was entered in Microsoft Excel Sheet and the data was analyzed using Excel and SPSS (Statistical package for social science) 18 **th** version. Results will be expressed in frequencies, Chi-square test and Fisher's exact t test was used for analyzing the risk factors. P value < 0.05 will be considered as statistically significant value.

5.9: Operational definitions

Elderly inmates

Refers to males and females aged 60 years and above who are residing in old age homes.

Overcrowding[109] (floor area per person)

110 sq.ft. (11 sq.m.) or more - more than 2 persons

90- 100 sq.ft. (9- 10 sq.m.) - more than 1 ½ persons

70- 90 sq.ft. (7- 9 sq.m.) - more than 1 persons

Smokers[110]

Non smokers: Respondents who never smoked.

Current smokers: Persons who smoke at the time of survey.

Ex smokers: Respondents who were not current smokers but who reported smoking in the past.

Alcohol[110]

Non-alcoholic: Respondents who never had alcohol.

Current alcoholic: Anyone who had at least one or more drinks of any type of alcohol in the year preceding the survey.

Ex alcoholic: Respondents who were not current alcoholic but who had drunk in the past.

Hypertension

Hypertension was assessed as per JNC VII criteria. Hypertension in this study is defined as systolic blood pressure (SBP) 140 mm Hg or more and diastolic blood pressure (DBP) 90 mm Hg or more or history of hypertension and current antihypertensive medication use[111].

Vision

Visual acuity [112] was tested using Snellen's 'E' chart.

Normal vision: If the elders read 6/18 or better

Visual impairment: If the elders read between 6/18 to 3/60

Blind: Visual acuity of less than 3/60

Hearing

Hearing was assessed using Voice test[106].

Normal hearing: Elders who can hear even whispering voice.

Mild impairment: Elders who cannot hear the whispering voice, but can hear and repeat words spoken in conversational voice at 1 meter.

Moderate impairment: Elders who can hear and repeat words using loud voice at 1 meter.

Severe impairment: Elders who can hear some words only on shouting into the ear.

Profound impairment (Deafness): Elders who cannot hear even on shouting.

Depression

Depression was assessed using geriatric depression scoring method[107].

Normal: 0 to 4

Mild depression: 5 to 8

Moderate depression: 8 to 11

Severe depression: 12 to 15.

6. RESULTS

A Cross sectional study on the Prevalence of Health problems was carried out among inmates of Old Age Homes in North zone of Chennai. The profile of old age homes is furnished in Table 4.

Table 4: Profile of Old Age Homes

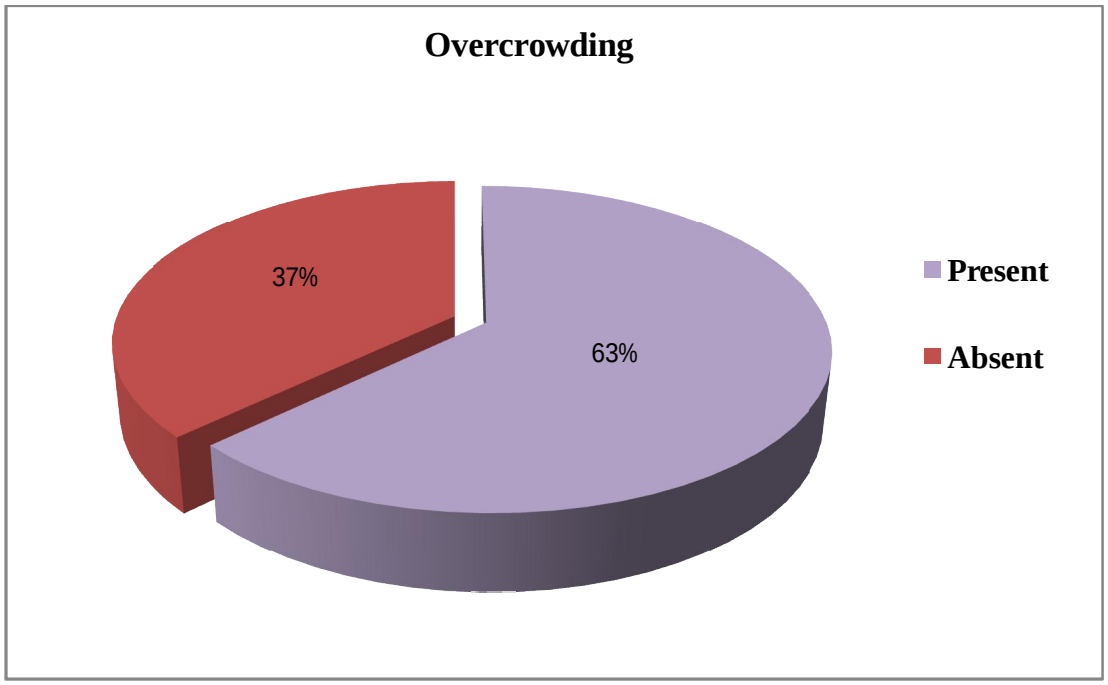
Particulars	Government	Private	Trust	Total
I. Number of old age homes	8	10	6	24
II. Type of service				
1. Free only	8	0	4	12
2. Paid only	0	7	0	7
3. Both (free and paid)	0	3	2	5
III. Criteria for admission				
1. No family members to care	6	1	4	11
2. Able to pay institutional charges	0	5	0	5
3. Should be free from diseases	1	3	2	6
4. Able to take care of self	1	1	0	2
IV. Overcrowding				
1. Present	6	4	5	15
2. Absent	2	6	1	9
V. Total Strength of inmates				
1. Male	213	231	166	610
2. Female	288	239	215	742

Particulars	Government	Private	Trust	Total
VI. Source of drinking water				
1. Corporation lorry water	3	2	3	8
2. Corporation pipe water	1	2	2	5
3. Bore water	3	5	3	11
4. Hand pump	2	1	1	4
VII. Food supply				
1. Vegetarian	7	2	5	14
2. Mixed (Veg and Non-veg)	1	8	1	10
VIII. Recreational activities				
1. Television	4	6	1	11
2. Radio	6	4	1	11
3. Newspaper	2	3	1	6
4. Indoor games	0	1	0	1
IX. Medical services				
1. Residential	0	1	0	1
2. Periodical	2	3	0	5
3. On call	0	3	2	5
4. By referral	6	3	4	13

Among the old age homes, free services were available in 50% of old age homes and paid services in 29% old age homes and both services were available in 21% of homes. Regarding the criteria for the admission of elders, major reason was no family members to care (46%) followed by the elders should be free from any disease (25%).

Number of males and females in all the old age homes were 610 (45%) and 742 (55%) respectively. Female elderly population is more than males.

Figure 4: Overcrowding



Overcrowding was found in 15 (63%) out of 24 old age homes, of which 6 homes were managed by Government and 5 homes were managed by trust.

The source of drinking water in most of the old age homes was bore water followed by corporation lorry water. Old age homes, which were managed by private, provide mixed diet to the inmates. Healthy elders were allowed to participate in home maintenance. Their participation is purely voluntary. Regarding the recreational activity, Radio was commonly used in Government homes and Television was common in Private homes.

In respect of the Government maintained old age home, periodical health check up was available in two old age home and the remaining homes elders are referred for treatment to the nearby Government Medical College Hospital and Urban health posts. Regarding private old age home, 24 hours medical service was available in one old age home, which provides services on payment basis. In the remaining private old age homes, medical professionals visit the homes either periodically or when called.

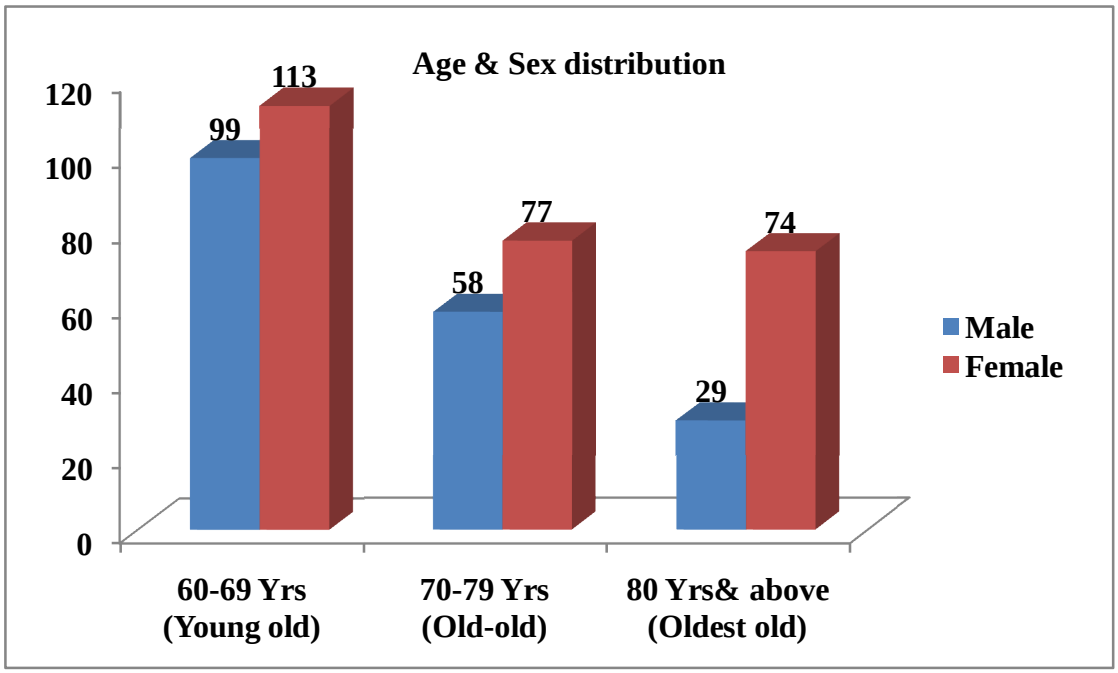
6.1: Socio demographic characteristics

6.1.1: Age and sex composition:

Among the 450 elders, 186 (41.3%) were males and 264 (58.7%) were females which showed that more number of females than males. Of the 186 males, 85 (46%) were in Govt. homes, 61 (32%) were in private homes and 40 (22%) were in trust. Of the 264 females, 131 (50%) were in Govt. homes, 69 (26%) were in private homes and 64 (24%) were in trust managed homes.

Regarding the age distribution of elders (Figure 5), young old (60-69 years) constituted the maximum of 47%, followed by old-old (70-79 years) which was 30% and oldest old (80 years and above age) was 23%. The Mean age of males was 64.5 years and the mean age of females was 66.9 years.

Fig 5: Age & Sex distribution of elders



6.1.2: Socio economic characteristics

Though the numbers of elders included in the study were 450, the investigator was able to interact only with 431 elders because of the poor mental status and sensory deficits of the remaining 19 elders. However, some information was collected from the caretakers.

Socio Economic characteristics of elders by sex are shown in Table 5. Of the elders (N=450), majority were Hindus (62%), followed by Christians (34%) and Muslims (4%). Most of the elders belong to Backward community (48%) followed by Most backward community (26%), Scheduled caste/Scheduled tribes (19%) and Forward community (7%). Regarding the educational status (N = 431) 56% were

literate and (44%) were illiterates. Illiteracy was more among females (74.4%) than in males (25.6%).

Socioeconomic classification of elders is based on their status prior to institutionalization. According to Modified Kuppuswamys socioeconomic scale (N=431), majority of the elders belonged to upper lower socio economic class (76%). Regarding the marital status of 450 elders, 342 (76%) was widow /widower, among them 125 (36.5%) of the males and 217 (63.5%) of the females were widowed. Among the married elders (18%), 13% of elders reside with their spouse in the same old age home, 2% of spouses reside in another old age home and 3% of elders were separated from their spouses before institutionalized.

Table 5: Socio economic characteristics of elders

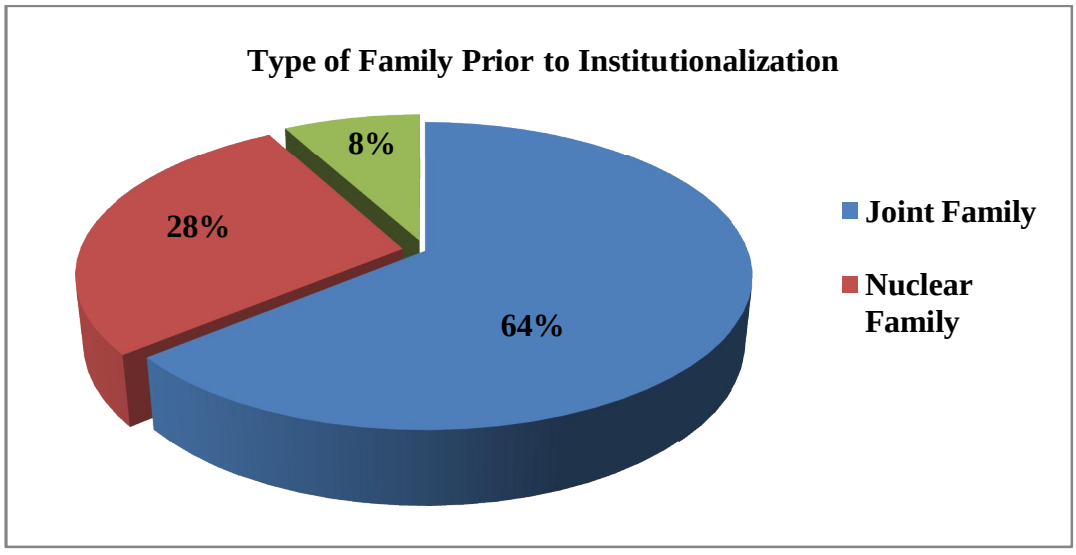
Characteristics	Males	Females	Total	Percentage
I. Religion (N= 450)				
1. Hindu	113	166	279	62%
2. Christian	69	85	154	34%
3. Muslim	4	13	17	4%
II. Education (N = 431)				
1. Illiterate	50	145	195	44%
2. Primary (I -V)	48	51	99	23%
3. Middle school (VI- VIII)	27	35	62	15%
4. High school (IX-X)	27	20	47	11%
5. Higher secondary school (XI-XII)	12	0	12	3%
6. Graduate	8	4	12	3%
7. Post graduate	4	0	4	1%

Characteristics	Males	Females	Total	Percentage
III. Socio Economic Class (N = 431)				
1. Upper middle	4	4	8	2%
2. Lower middle	51	20	71	16%
3. Upper lower	110	215	325	76%
4. Lower	13	14	27	6%
IV. Marital status (N = 450)				
1. Unmarried	20	8	28	6%
2. Married and spouse alive	45	23	68	15%
3. Married and separated	8	4	12	3%
4. Widow/widowers	125	217	342	76%

6.1.3: Type of family prior to Institutionalization

Among the elders, 64% were lived in joint family, 28% were lived in nuclear family and 8% were lived alone prior to institutionalization.

Fig 6: Type of Family Prior to Institutionalization



6.2: Personal habits of elders:

Among the elderly males, 34% were ex-smokers, 9% were current smokers and 35% were ex-alcoholic. Elders who were currently consuming alcohol comprised 3.7% out of which only one was female.

Regarding the other personal habits of elders, 61 (13.5%) has betel leaves chewing habit, of which females were 48 (79%). When compared with sex, smoking and alcohol consumption was more in males while betel leaf chewing was more in females which were found to be statistically significant (P 0.000). 5.2% of elders were having habit of using snuff.

Table 6: Personal Habits (Smoking, Alcohol and other habits) of elders according to Sex

Personal Habits	Male	Female	Total	Fisher's value	P value
I. Smoking (N=450)					
1.Current smoker	16	2	18	97.98	0.000
2.Ex-smoker	63	4	67		
3.Non-smoker	107	258	365		
II. Alcohol (N=450)					
1.Current alcoholic	16	1	17	99.71	0.000
2.Ex-alcoholics	66	3	69		
3.Non-alcoholics	104	260	364		
III. Other habits					
1.Betel leaves	13	48	61	20.40	0.000
2.Snuff	17	6	23		

6.3: Prevalence of Health Problems

It was found that only 5% elders were clinically free from Health Problem. The percentage of elders with one, two and multiple chronic health problems were 18%, 32%, and 45% respectively.

Table 7: Prevalence of Health Problems among elders

Health problems	Male (186)	Female (264)	Total
1. No health problem	8	17	25 (5%)
2.One health problem	27	52	79 (18%)
3.Two health problem	64	78	142 (32%)
4.Multiple health problems	87	117	204 (45%)

The prevalence of individual health problems were shown in Table 8. The major health problem was Hypertension (67%) followed by Visual problems (64%), Depression (43%), Hearing problems (42%), Arthritis (41%) and Diabetes mellitus (30%).

Table 8: Prevalence of individual Health Problems

S. No	Health Problem	Frequency	Percentage	95% CI
1.	Hypertension	306	68%	62.57- 71.43
2.	Visual Problem	288	64%	59.44- 68.56
3.	Depression	194	43%	38.34- 47.66
4.	Hearing Problem	189	42%	37.36- 46.64
5.	Arthritis	185	41%	36.38- 45.62
6.	Diabetes mellitus	135	30%	25.70- 34.30

6.3.1: Hypertension

According to JNC VII Criteria the Blood Pressure distribution of the study subjects during the study was shown in Table 9. 32% of elder's blood pressure was within normal limit. The mean BP of the study population was 130/86 mmHg. The Stage I and Stage II hypertension among elders were 30% and 13% respectively.

Table 9: The Blood Pressure Distribution of the study subjects (JNC VII Criteria)

JNC VII Criteria		**Frequency**
1. Normal (< 120/80 mmHg)		144 (32%)
2. Pre Hypertension (120 -139/ 80- 89 mmHg)		113 (25%)
3. Hypertension ≥140/90	Stage I (140- 159/90-99 mmHg)	136 (30%)
	Stage II (≥160/100 mmHg)	57 (13%)

Table 10: Age, Sex and Severity of Hypertension

Characteristics	**Normal**	**Pre Hypertension**	**Stage I**	**Stage II**	**χ^2 (P value)**
AGE (N=450)					
1. 60 – 69 yrs	78 (17%)	54 (12 %)	62 (14%)	18 (4%)	41.9, (0.000)
2. 70- 79 yrs	35 (8%)	31 (7%)	40 (9%)	29 (6.4%)	
3. ≥ 80 yrs	31 (7%)	28 (6%)	34 (8%)	10 (2.2%)	
SEX (N=450)					
1. Male	76 (17%)	41 (9%)	51(11%)	18 (4%)	12.02 (0.007)
2. Female	68 (15%)	72 (16%)	85 (19%)	39 (9%)	

The severity of hypertension was found to be increased with age. It was high among in the age group of more than 70 yrs and high among females and the difference was statistically significant (P 0.000).

Among the study population, 48% (216) of elders were known hypertensive and confirmed with medical records. 20% (90) of elders were newly diagnosed as hypertensive during the study period by the investigator. The overall prevalence of hypertension among the study subjects was 68% (306).

Among the known hypertensive (216), 164 (76%) of elders were under treatment and the remaining 52 (24%) elders were not taking treatment. The reason for not taking treatment for hypertension shown in Table 11.

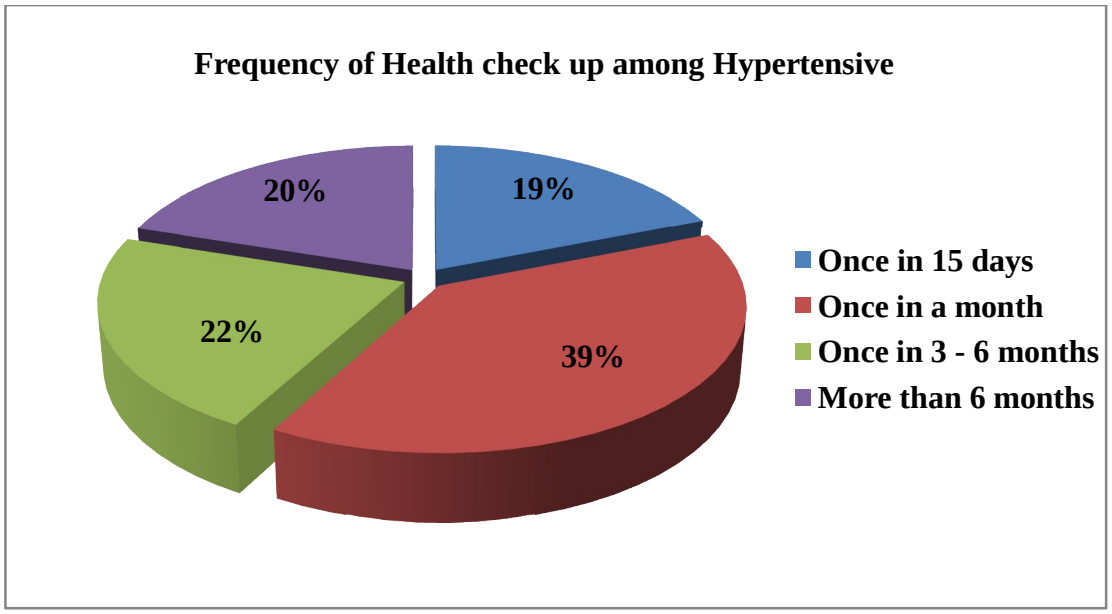
Table 11: Reasons for not taking treatment for Hypertension

S. No	Reasons for not taking treatment	Frequency
1	No physician in the home	21 (41%)
2	Non availability of drugs	16 (29%)
3	Non availability of attenders	11 (22%)
4	Distance	4 (8%)
TOTAL		**52**

Among the known hypertensive under treatment (164), only 82% of elders were taking treatment regularly and 18% of elders were not under regular treatment. The duration of treatment for Hypertension was less than 3 yrs in 33%, 3-6 yrs in 43%, 6-9 yrs in 20%, more than 9 yrs in 4 % of elders.

Among the hypertensive elders 19 % had a health check up for once in 15 days, 39% had once in a month, 22% had once in 3- 6 months and 20 % elders had a check up for once in more than 6 months. The frequency health check up was shown in Figure 7.

Fig 7: Frequency of Health check up among Hypertensive



Among the known hypertensive (216), 30 (14%) elders had a family history of hypertension and 33 (15%) of elders had suffered from complication of hypertension.

Table 12: Complications of Hypertension and Frequency of Health check up

Frequency of Health Check up	Complications due to Hypertension		χ^2 (P value)
	Yes	No	
1. Once in a month	12	113	7.3 (0.0000)
2. More than a month	21	70	

Chisquare 450 df 1 P < 0.05 Significant

There was a statistically significant difference between the frequency of health check up and complications due to hypertension among the study subjects (P value 0.000). The complications were more among the elders who had health check up with the frequency of more than a month.

6.3.2: Diabetes Mellitus

Among the study population 30% elders were diagnosed as diabetic by the physician and confirmed with records by the investigator. Among the diabetics only 72% were under treatment. The reasons for not taking treatment for diabetes were No physician in the home (49%) followed by Non availability of drugs (34%), Non availability of attenders (10%) and Distance (7%). The profile of the study subjects with diabetes mellitus was shown in Table 13.

Table 13: Profile of study subjects with Diabetes Mellitus

S.No	Factors		Yes	No	Total
1	Known Diabetic		135 (30%)	315 (70%)	450
2	Under medication		97 (72%)	38 (28%)	135
3	Duration of treatment	Less than 3 year	18 (19%)	-	97
		3-6 year	32 (33%)	-	
		6-9 year	13 (13%)	-	
		More than 9 year	34 (35%)	-	
4	Regular intake of treatment		64 (66%)	33 (34%)	97
5	Frequency of Health Check up	Once in 15 days	20 (15%)	-	135
		Once in a month	43 (32%)	-	
		Once in 3 - 6 months	58 (43%)	-	
		More than 6 months	14 (10%)	-	
6	Complications of Diabetes		44 (33%)	91 (67%)	135

There was a statistically significant difference between the frequency of health check up and complications of diabetes mellitus among the study subjects (P value 0.000). The complications were more among those who had the health check up for once in two months and above.

Table 14: Duration of stay in old age home and Regular intake of Medication for Diabetes

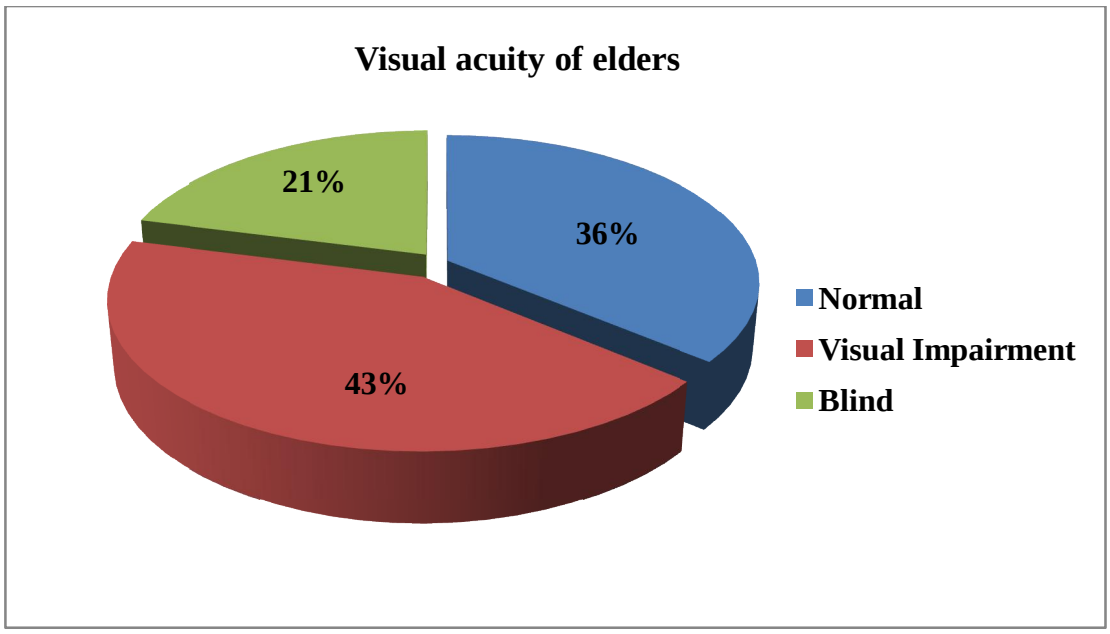
Characteristics		Regular intake of medication for		Total	χ^2 (P value)
		Yes	No		
Duration of stay	Less than 1 yr	29	7	36	5.12, (0.07)
	More than 1 yr	35	26	61	
	Total	**64**	**33**	**97**	

It was found that a statistically significant difference (P 0.07) between the regular intake of medication for diabetes and duration of stay in the old age home (Table14). Irregular medication for diabetes was seen among the elders with more than one year duration of stay in the old age home. Among the known diabetics, 18% of elders had family history of diabetes mellitus.

6.3.3: Visual problems

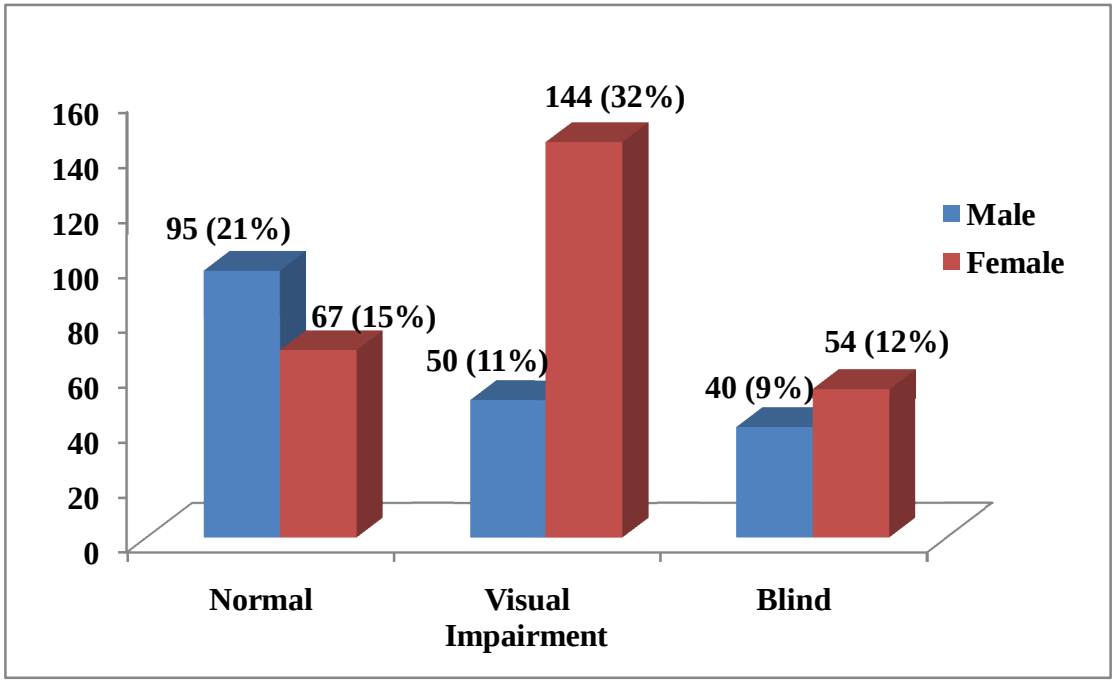
Among the study subjects tested for vision by Snellen's chart, 162 (36%) elders had normal vision and 288 (64%) elders had visual problems. The overall prevalence of Visual impairment and Blind was 43 % and 21 % respectively.

Fig 8: Visual acuity of the elders



The prevalence of visual problems according to sex was shown in figure 9. Visual problems were high among females than males and the difference was found to be statistically significant (Chi Square 39.8, P 0.000).

Fig 9: Prevalence of visual problems according to sex



The duration of difficulty in seeing objects was less than 1 year in 26% , 1 – 2 year in 34%, 2- 3 year in 23% and more than 3 years in 17% of elders. The mean duration for difficulty in seeing objects was 2 years.

Among the 288 elders with visual problems, only 130 (45%) were consulted Eye specialist. The reasons for not consulting the Eye specialist were shown in Table 15. The reasons were Distance (41%), No money to pay (35%), Non availability of attenders (16%) and Satisfied with the vision they had (8 %).

Table 15: The reasons for not consulting the Eye specialist

S. No	Reasons for not consulting the Eye specialist	Frequency (Percentage)
1	Distance	64 (41%)
2	No money to pay	56 (35%)
3	Non availability of attenders	25 (16%)
4	Satisfied with the vision they had	13 (8%)
	Total	**158**

Of the 450 elders, 230 (51%) had operated for cataract surgery. After operated for cataract surgery, 18% of elders had eye check up once in 3 months and 24% had eye check up for once in 6 months. 58% of elders had no check up after cataract surgery.

Table 16: Visual impairment following Cataract surgery

Cataract surgery with regular eye check up	Visual impairment		$\chi 2$ (P value)
	Present	Absent	
Present	40	57	15.99 (P 0.000)
Absent	90	43	

After operated for cataract surgery, elders who did not have eye checkup had more visual impairment than those who had eye checkup and the difference was statistically significant (P 0.000).

6.3.4: Arthritis:

The prevalence of Arthritis among the elders was 41%, it was high among females (61%) than males (39%), but the difference was not statistically significant (P > 0.05).

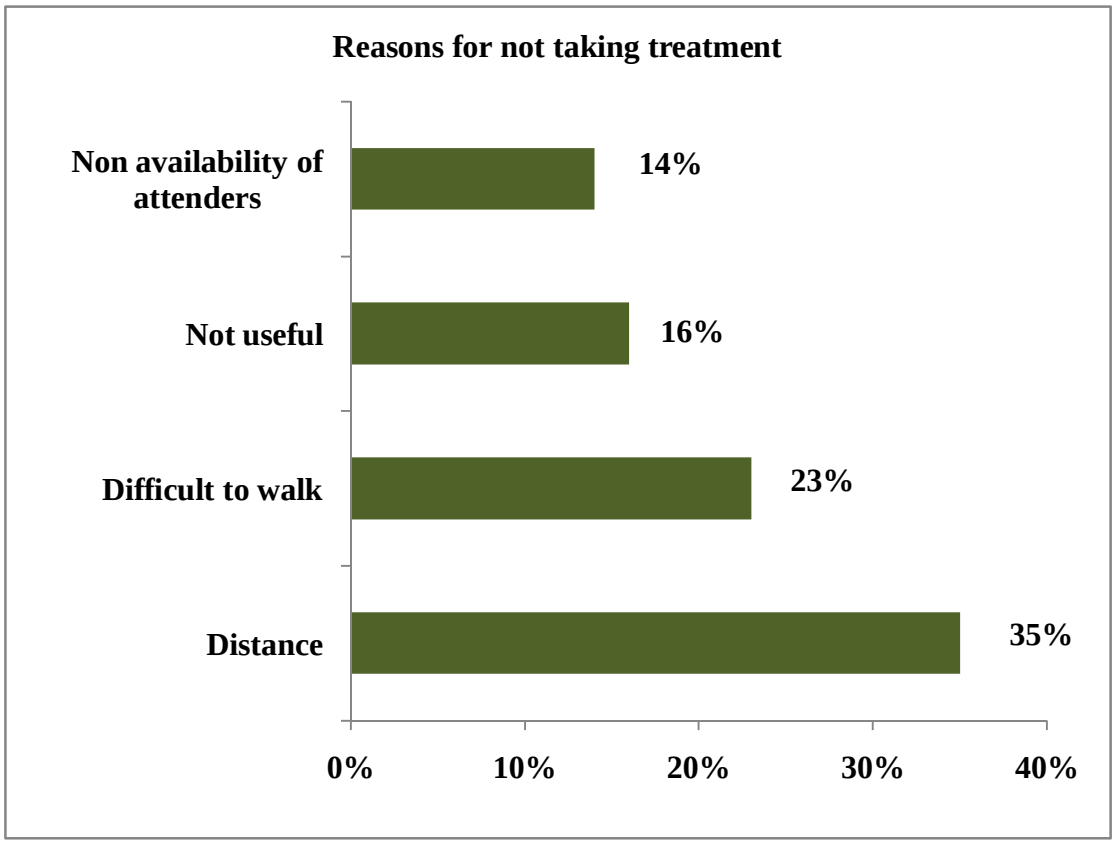
Table 17: Prevalence of Arthritis according to sex

Arthritis	Male	Female
Present	73	112
Absent	113	152
Total	186	264

Chisquare 0.45 df 1 P > 0.05 not significant

Among 41% of elders with arthritis, only 64% were under treatment. The reasons for not taking the treatment were Distance (35%), Difficulty in walking (23%), Not useful (16%), Non availability of attenders (14%) and Non availability of medicines in the old age homes (12%).

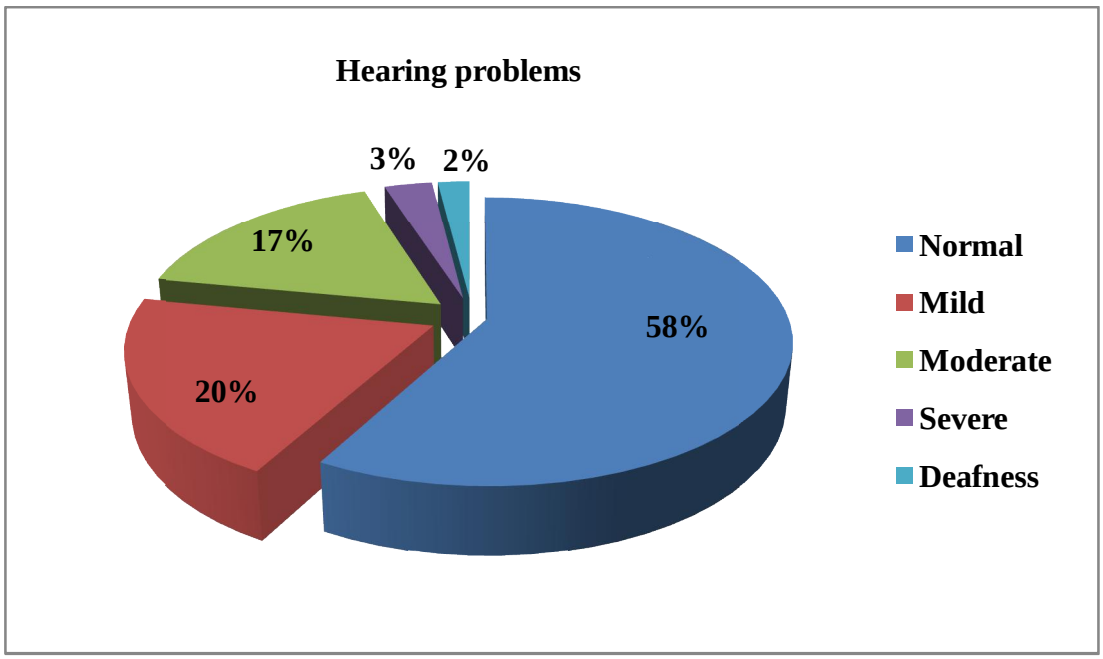
Fig 10: Reasons for not taking treatment for Arthritis



6.3.5: Hearing problems

Among the study subjects tested for hearing by voice test, 58% of elders had normal hearing and 42% had hearing problem. The hearing problem among the elders was shown in Figure 11.

Fig 11: Hearing problems among the elders



It was observed that Hearing problem was high among females than males and the difference was found to be statistically significant (Chi Square value 6.87, P 0.009).

Among 42% of elders with hearing problem, only 8% were using hearing aids. The reasons for not using hearing aid were shown in Table 18. The most common reason was non availability of hearing aids.

Table 18: Reasons for not using hearing aid

Reasons	Frequency (Percentage)
1. Non availability	64 (37%
2. Expensive	63 (36%)
3. Not aware about hearing aid	24 (14%)
4. Not useful	23 (13%)

6.3.6: Depression

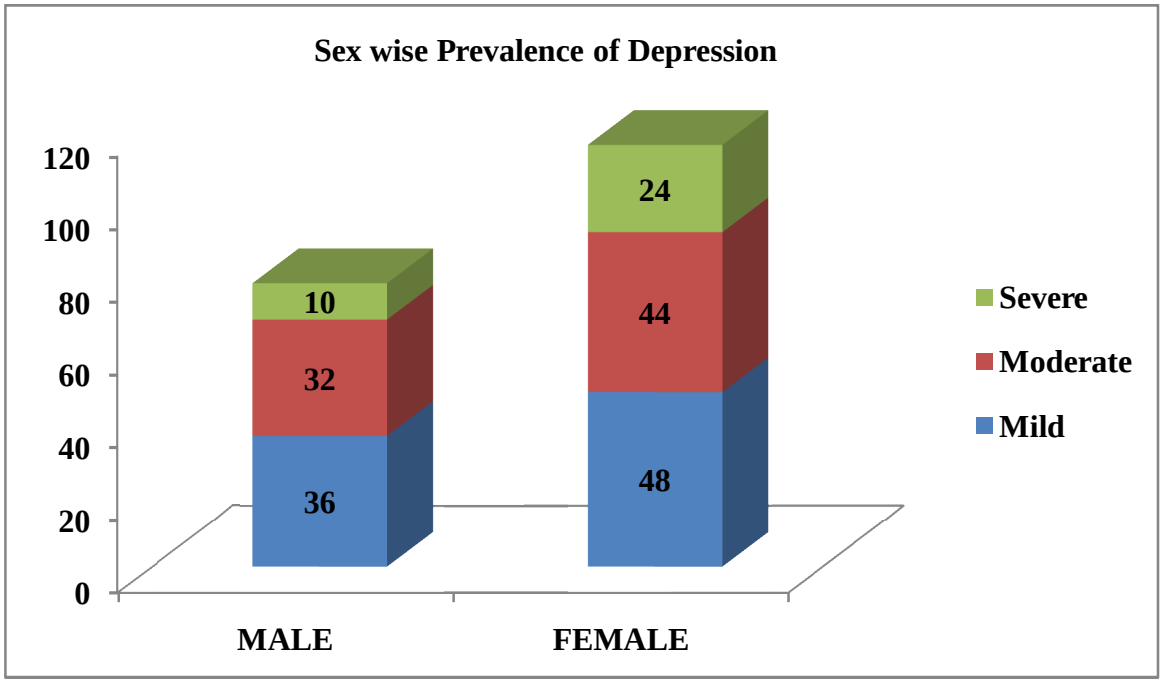
The overall prevalence of depression according to Geriatric Depression scale was 43%, the prevalence of mild, moderate, severe depression was furnished in Table 19.

Table 19: Grading of depression

S. No	Grading of depression	Prevalence (Percentage)
1	Mild	84 (43%)
2	Moderate	76 (39%)
3	Severe	34 (18%)
	Total	194

Prevalence of depression according to sex was shown in Fig 12, but the difference was not statistically significant (Chi Square 0.18, P 0.98).

Fig 12: Sex wise Prevalence of Depression



Among the study population there was no statistically significant difference between the prevalence of depression and the factors like duration stay, family contacts, and leisure time activities.

6.3.7: Other health problems:

The other health problems of elderly which was confirmed with the medical records were Oral problems (39%), Insomnia (38%), Gastro intestinal problems (27%), Cardio vascular problems (22%), Genito-urinary (20%), Skin diseases (14%), Respiratory problems (12%), CNS disorders (9%) and Endocrine disorders (4%).

Table 20: Other health problems

S. No	Health Problem	Prevalence
1.	Oral problems	39%
2.	Insomnia	38%
3.	Gastro intestinal	27%
4.	Cardiovascular problems	22%
5.	Genito-urinary	20%
6.	Skin diseases	14%
7.	Respiratory problems	12%
8.	CNS disorders	9%
9.	Endocrine disorders	4%

6.4: Reasons for institutionalization:

Table 21 shows the reasons for institutionalization of elders in old age homes. The major reasons for institutionalization were Health Problems (32%), no family members alive to take care (30%) and did not want to be a hindrance to their family (17%).

Table 21: Reasons for Institutionalization

S. No	Reasons for Institutionalization	Male	Female	Total	Percentage
1.	Health problems	56	90	146	32%
2.	No family members alive to take care	51	85	136	30%
3.	Didn't want to be a hindrance to the family	42	35	77	17%
4.	Economic insufficiency	10	19	29	6%
5.	Children living in another place	9	14	23	6%
6.	Abuse by family members	11	10	21	5%
7.	Neglected by family members	7	11	18	4%

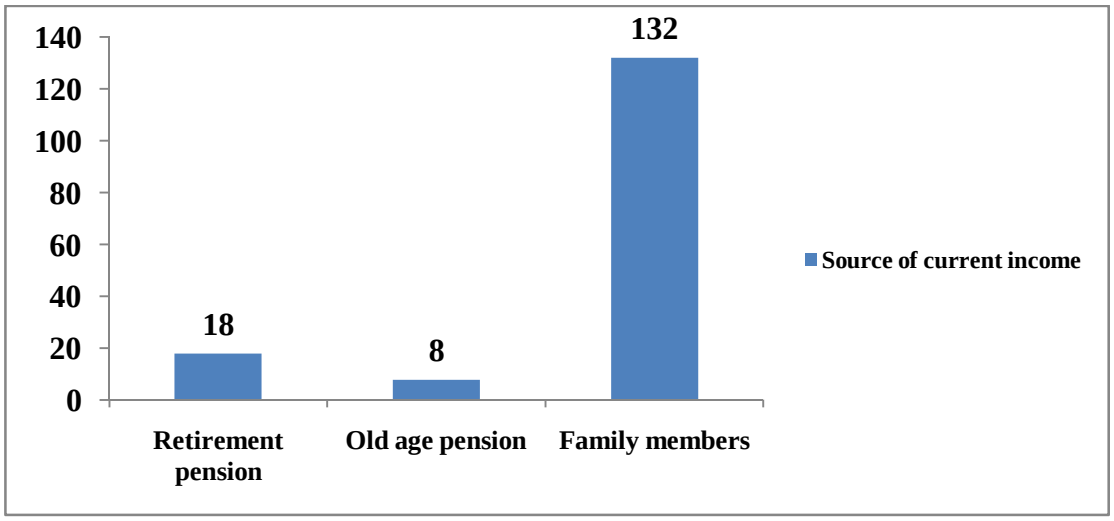
Among the study population, 40% were admitted in the old age home by family members, 22% of them were self admitted, 21% by friends, 9 % were admitted by neighborhood and 8% were rescued by Help Age India from streets. The mean duration of stay in the old age home was 3 yrs for both sexes. Long duration of stay was observed to be more among females than males.

6.5: Current income and financial dependency:

Only 35% (158) elders had one or other means of current income. The source of current income was Retirement pension 18 (11%), Old age pension 8 (5%) and

getting from the family members 132 (84%). Among the study population, 87% elders were financially dependent on family members.

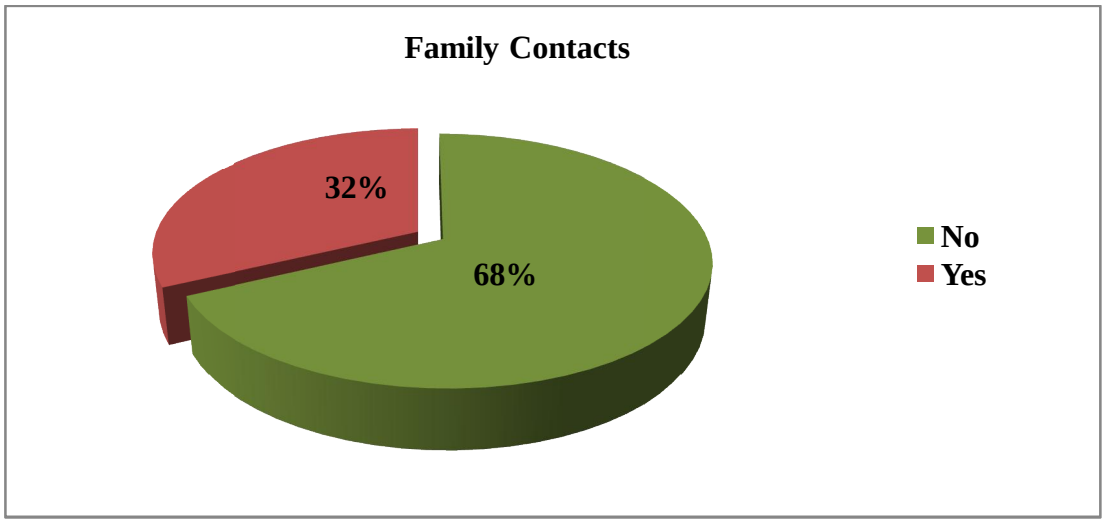
Fig 13: Source of current income of the elders



6.6: Family contacts

Of the 450 elders, 157 (35%) of elders did not have family. Remaining 293 (65%) elders, only 94 (32%) elders have family contact and 199 (68%) elders did not have any family contacts after their admission in the old age homes.

Fig 14: Family contacts after institutionalization



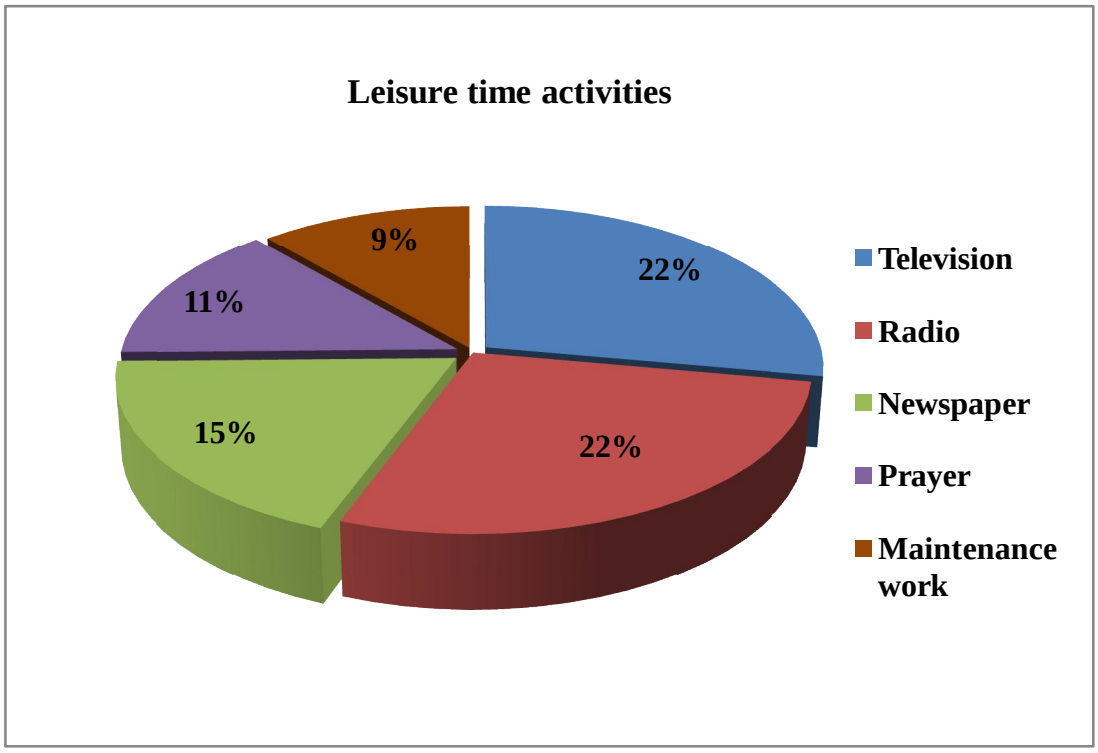
According to sex, 41.7% of males and 58.3% of females did not have family contacts. Greatest proportion of elders in the age group of 70-79 yrs (24.4%) did not have family contacts and this was found to be statistically significant (χ^2 37.97, P 0.000).

The frequency of the visits was monthly once for 46%, 1- 3 months for 25%, 3-6 months for 26% and more than six months for 3% of elders .

6.7: Leisure time activity

Regarding the leisure time activities of elders in old age homes, 21 % did not have any leisure time activities. Of them, majorities were in age group 80 years and above and from lower socioeconomic class. The leisure time activity of remaining elders (79%) was shown in figure 15.

Fig 15: Leisure time activities of the study population



Greater proportion of males (30%) spent their time in listening Radio and greater proportion of females (33%) prefers to watch Television. Most of the elders above the age group 80 years spent their time in prayers while elders in the younger age group 60-69 years prefer to watch television.

It was observed that elders from upper socio economic class preferred to read news papers and elders from lower socio economic class preferred Television and Radio.

6.8: Activities of Daily Living

The degree of physical dependency of elders for various activities of daily living is shown in Table 22. Among the study population, 356 (79%) were found to be independent for all the activities. Of the remaining, 36 (8%) and 58 (13%) were fully and partially dependent respectively. The fully dependent state was 2% among the age group of 60 – 69 yrs, 2% in the age group of 70-79 yrs and 4% in 80 yrs and above.

Table 22: Degree of Physical Dependency for various activities of Daily living (Katz Scale)

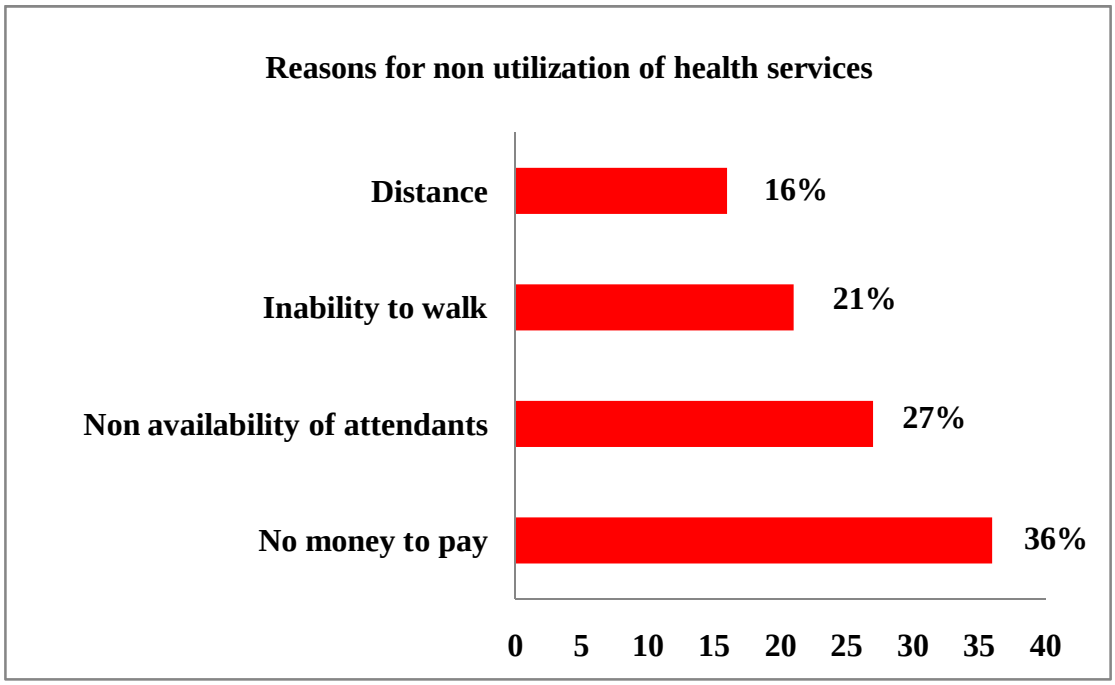
Activities	Degree of dependency		
	Fully (Score 0)	**Partial (Score 1)**	**Independent (Score 2)**
Eating	0	65 (14.4%)	385 (85.5%)
Dressing	25 (5.5%)	68 (15.1%)	357 (71.3%)
Bathing	32 (7.1%)	74 (16.4%)	344 (76.4%)
Transferring	39 (8.6%)	74 (16.4%)	337 (74.8%)
Toileting	39 (8.6%)	80(17.7%)	331 (73.5%)
Continence	5 (1.1%)	24 (5.3%)	421 (93.5%)

The maximum dependency was observed among 8.6% of elders for Transfer and Toilet purpose followed by 7.1% for bathing and dressing in respect of 5.5% elders. None of the elders were fully dependent for eating.

6.9: Health service utilization

78% of elders were utilizing health services during the period of illness. Among the users 42% preferred Private hospitals, 34% preferred Government services and only 2% preferred old age home doctors for their treatment if they have suffered from any illness in old age homes. However 22% were not utilizing health services due to reasons such as No money to pay (36%), Non availability of attendants to accompany (27%), inability to walk (21%) and distance (16%). Reasons for non utilization of health services are shown in fig 16.

Fig 16: Reasons for non utilization of health services



Among the study population only 12% of elders aware about the benefits offered by the government, 88% of elders were unaware about the benefits. Among the elders aware about the benefits (12%), only 5% of elders were getting the old age pension.

6.10: Examination of the study subjects

6.10.1: Height and weight:

Height was recorded among 421 elders and the rest of elders could not stand even with support for recording the height. Weight was recorded among 421 elders and the same could not be recorded in respect of 29 elders who cannot stand without support. The mean height and weight for the study population was 151.6 cm and 49.5 kg respectively.

6.10.2: Body Mass Index (BMI):

Regarding the nutritional status of the elders based on BMI, 38% males and 29% females were underweight. Examination of the study subjects was shown in table 23.

Table 23: Examination of the Elders

Characteristics		Male (Frequency)	Female (Frequency)	Total
Height (N= 421)	Less than 140 cm	5	53	58
	140-150 cm	38	144	182
	151-160 cm	73	38	111
	More than 160 cm	56	14	70
Weight (N= 421)	Less than 40 kg	63	88	151
	40-50 kg	47	65	112
	51- 60 kg	31	43	74
	More than 60 kg	30	54	84
Body Mass Index (N= 421)	Less than 18.5	67	70	137
	18.5- 24.9	82	136	218
	More than 25.0	27	39	66
Waist circumference (N= 450)	Less than 88 cm	105	158	263
	88- 102 cm	53	69	122
	More than 102 cm	28	37	65

7. DISCUSSION

A Cross sectional study was done among the inmates of old age homes in North zone of Chennai to know the prevalence of health problems and the factors associated with health problems. This study was conducted among the government, private and trust managed old age homes. Among the old age homes, free services were available in 50% of old age homes and paid services in 29% old age homes and both services were available in 21% of homes.

7.1: Socio demographic characteristics

7.1.1: Age and sex

In the present study, females (58.7%) outnumbered the males (41.3%) in the old age homes. More number of females was institutionalized than males. Population based studies showed that sex distribution of 55% females and 45% males at Wardha[113] and 52.3% females and 47.7% males in rural area of South India [114].

The present study found that 64.4% of females and 58.6% of males were in free old age homes. It indicates that females are admitted more in free homes.

Regarding the age distribution of study subjects, young old (60-69 years) constituted the maximum percentage of 47%, followed by old-old (70-79 years) were 30% and oldest old (80 years and above age) were 23%. Population based studies showed the distribution of elders was 68.3% were young old, 23.3% were old-old and 8.3% were oldest old at Varanasi [115].

7.1.2: Literacy

In the present study, 44% of elders were illiterates. Illiteracy was more among females (74.4%) compared to males (25.6%), similarly Uddin et al [30] showed that 45% of elders were illiterates and illiteracy was high among females.

7.1.3: Socio Economic Class

Majority of the elders was from upper lower (76%) and lower middle (16%) socio economic strata (class IV and III). In the lower socioeconomic strata, the working generation is unable to extend social and economic support to the aged because they may not afford.

7.1.4: Marital status

In the present study, 63.5% of women were widows and 36.5% of men were widowers. The incidence of widowhood is much greater among females than males might be due to the comparatively higher life expectancy among the older females.

85% of elders living in old age homes were without life partners either because they were unmarried, widowed or separated. So marital status is an important determinant of where older persons reside.

A study done in three old age homes in Pune City revealed that 81% of women were widows [116]. The lesser percentage of widowed women observed in the present study may be due to socio cultural differences, between the populations studied.

7.2: Personal habits

Current smokers and current alcohol users were less in number in old age homes (only 4% and 3.7% respectively) because of their financial constraints and the strict regulations of the old age homes. Kokila Selvaraj [42] study found that, 38.7% were smokers and 17.6% consume alcohol, this higher percentage was due to community based study.

7.3: Health Problems

Overall 95% of elders had one or more health problems. The percentage of elders with single, two and three or more health problems were 18%, 32%, and 45% respectively. Multiple health problems were observed to be more among higher age group elders and among females.

The prevalence of health problems in this study population was Hypertension (68%) followed by Visual problems (64%), Depression (43%), Hearing problems (42%), Arthritis (41%) and Diabetes mellitus (30%). Similar health problems was observed in Srivastava et al[43] multi centric study, which includes Poor Vision (45.4%), Hypertension (38.2%), Arthritis (36.1%), Depression (23.6%), Difficulty in Hearing (20.5%) and Diabetes (13.3%).

Blood pressure was recorded for all the study subjects. Based on the medical records and statement of elders, 48% (216) were already diagnosed as hypertensive and were under treatment. 20% (90) of elders were newly diagnosed as having high BP readings through physical examination and they are not under treatment.

Agarwal et al [48] reported that the prevalence of hypertension was 42.1%. Moharana et al [50] showed half of the elderly (51%) was hypertensive. In the present study also showed high prevalence of hypertension (67%) among elders.

In the present study according to JNC criteria VII, the severity of hypertension was significantly associated with increased age and female gender. There was a statistically significant difference found between the frequencies of health check up and complications due to hypertension.

In this study 30% of elders were diagnosed as diabetic by the physician which was similar to Moharana et al [50] where the prevalence of diabetes was 36%. In another study undertaken by Sidhartha Das, K.N.Padhiary [55] at Bhubaneshwar, the prevalence was 20% in the age group of 65 years and above.

Since detection of diabetes was beyond the scope of the study, it may be assumed that most of the diabetes may be remain undiagnosed. These indicate the ignorance of elders and lack of periodic health checkups by the health professionals rendering care. It emphasizes that providing the required curative services will not be sufficient in case of elderly.

In this study among the known diabetics only 72% were under treatment. The reasons for not taking treatment for diabetes were No physician in the home (49%) followed by Non availability of drugs (34%), Non availability of attenders (10%) and Distance (7%). There was a statistically significant difference between the frequency of health check up and complications of diabetes mellitus among the study subjects

(P value 0.000). The complications were more among those who had the health check up for once in two months and above.

In this study, 64% of elders had visual problem with the overall prevalence of Visual impairment and blind was 43 % and 21 % respectively. Visual problems were high among females than males and the difference was found to be statistically significant. In Rajiv Khandekar et al[60] study found that, the prevalence of vision impairment was 37%, similar to the present study.

The prevalence of arthritis in this study was 41%, which was similar to a study conducted in Tamil Nadu[49] where the prevalence of arthritis was 45%. In another study conducted by Shahar[72] reported the prevalence of arthritis was 45%.

Among the study subjects tested for hearing by voice test, 42% had hearing problem of which the prevalence of profound hearing loss was 2%. In a study by Rajiv Khandekar et al[60] found that the prevalence of hearing impairment was 33.5% and profound hearing loss was 3.6%.

In the present study, hearing problem was high among females than males and the difference was found to be statistically significant. Among the elders with hearing problem only 8% were using hearing aids.

Rajkumar et al[78] in their study showed the prevalence of any depressive episode was 12.7%. Of those elders 3.2% had a mild, 7.6% had moderate and 1.9% had severe depressive episode. In this study the prevalence was high (43%) and the prevalence of mild, moderate and severe depression was 43%, 39% and 18%

respectively. Since this study was conducted in old age homes, the high prevalence was observed.

In a study done by Jeung-Im Kim et al [80] showed the prevalence of depression was 63% in geriatric population and the depression was higher in women than in men. Similarly in this study also the prevalence was high among females.

7.4: Reasons for institutionalization:

In the present study, 8% of elders were living alone prior to institutionalization. Most of the elders (40%) were admitted in the old age homes by family members. The main reason for institutionalization was health problems (32%). This proves how the health status of the elders affects their quality of life in the family. The family members find difficulty to give care for their elders at times of their illness. So more number of elders was institutionalized when they develop one or more health problems.

Nearly 17% of elders stated that they do not want to be a hindrance for their family members and 5% of elders stated that their family members abused them. Whatever be the reasons stated they only imply the lack of adjustment and the present attitude of the younger generation to give care for the elders.

7.5: Financial dependency:

As per the findings of National Sample Survey Organization (NSSO) 52nd round, the financial dependency of elders was 51.1% in the community. It is natural that from an elder population of higher financial dependency, more will be

institutionalized. This is well reflected in the present study 87% of elders in the old age homes were financially dependent. In a study conducted in Chennai, Lucknow and New Delhi it was observed that more than 48% of the elders have no income [86]. The percentage of financial dependency can be minimized if the government provides adequate social security measures for the elders.

7.6: Family contacts:

Of the 450 elders, 35% of elders did not have any family. Remaining 65% of elders, only 32% of the elders had the family contact and 199 (68%) elders did not have any family contacts after their admission in the old age homes. Sex wise more numbers of males do not have family contacts.

Greatest proportion of elders in the age group of 70- 79 yrs (24.4%) and from lower socioeconomic status did not have family contacts and this was found to be statistically significant. This showed that how their socioeconomic status affects their relationship in the family.

7.7: Leisure time activity:

Newspapers, Television and Radio were available in all the homes. In spite of all this, it was found in the present study that 21% of elders do not have leisure time activities. This may be due to their sensory deficits and poor health status. Elders above the age group 80 years spent their time in prayers while elders in the younger age group (60-69 years) prefer to watch television.

7.8: Activities of Daily Living:

Physical dependency is an important problem of elders. Katz scale for Activities of Daily living was used to measure their status of physical dependency. In this study, 356 (79%) elders were found to be independent for all the activities and 21% were dependent on any one of the activities. It was found that 36 (8%) were fully dependent for any or more of the activities of daily living. This was found to be more among females and elders aged 80 and above.

Similarly Fried et al[92] showed that disability and functional limitation increased with advancing age and was higher in women than in men. Rao et al [95] showed majorities had at least one functional limitation and 22% had at least one restricted Activities of Daily Living (ADL).

7.9: Health service utilization:

Lena et al [97] has reported in a community based study in Karnataka that only 14.6% of elders had utilized the geriatric welfare services. However in the present study health services utilization by elders in old age home was found to be 78%. This is because of the availability of medical services to the institutionalized elders.

In this study, 22% of elders stated that they were not able to utilize health services for reasons like No money to pay (36%), Non availability of attendants to accompany (27%), inability to walk (21%) and distance (16%).

So it is necessary for the management of old age homes to arrange regular checkup in old age home and to provide support to the needy elders in transferring them to the nearest government medical institutions where the cost barrier can be overcome.

8. SUMMARY

A Cross sectional study was done among the inmates of old age homes in north zone of Chennai to know the prevalence of health problems and the factors associated with health problems. This study was conducted among the government, private and trust managed old age homes.

Among the old age homes, free services were available in 50% of old age homes and paid services in 29% old age homes and both services were available in 21% of homes.

Regarding the criteria for the admission of elders in old age homes, major reason was no family members to care (46%), followed by the elders should be free from any disease (25%).

Overcrowding was observed in 15 (63%) of old age homes, of which 6 homes were managed by Government and 5 homes were managed by trust.

Medical services were available in only 2 out of 8 government old age homes, whereas in rest of the homes the elders are referred for treatment. However, Medical services were available in all private old age homes,

Among the study population, young old (60-69 years) constituted the maximum percentage of 47%, followed by old-old (70-79 years) which was 30% and oldest old (80 years and above age) was 23%.

The number of females is more than the number of males and most of the elders were from upper lower socio economic status. Majority of elders was Hindus (62%) and 44% of elders were illiterates.

The proportion of widows (63.5%) was more compared to widowers (36.5%). Most of the elders had lived with their family members prior to institutionalization.

Regarding the personal habits of elderly males, 34% were ex-smokers, 9% were current smokers and 35% were ex-alcoholic. Elders who were currently consuming alcohol comprised 3.7% out of which only one was female.

Health problem (32%) was the most important reason for institutionalization followed by who had no family members alive to give care (30%) among the study subjects.

Overall 95% of elders had one or more health problems. Multiple health problems were observed to be more among higher age group elders and among females.

The prevalence of health problems in this study population was Hypertension (68%) followed by Visual problems (64%), Depression (43%), Hearing problems (42%), Arthritis (41%) and Diabetes mellitus (30%).

The frequency of health check up among known hypertensive's and diabetics was not adequate in all the old age homes. The complication due to hypertension and diabetes was high among elders because of their irregular health check up.

24% of elders with hypertension and 28% of elders with diabetes were not taking treatment due to non availability of Physician in the homes and Non availability of drugs in the old age homes.

Among the 450 elders, 51% had operated for cataract surgery, among them 58% had no eye check up after cataract surgery.

Among 42% of elders with hearing problem, only 8% were using hearing aids. The prevalence of depression was 43% and it was higher in women than men.

Nearly one third of elders had one or other means of current income. However it was observed that 87% of elders were financially dependent.

Only 32% of the elders have family contacts after their institutionalization. It was found that 21% of elders did not have leisure time activities.

Of all the elders, it was found that 21% were fully or partially dependent for one or more of the activities of daily living. This was found to be more among females.

88 % of elders did not know any of the benefits offered by government. Only 5% elders were getting old age pension.

Health services utilization by elders in old age home was found to be 78% but the quality and quantity seems to be inadequate and 22% of elders stated that they were not able to utilize health services for reasons like No money to pay, inability to walk, Non availability of attenders and distance.

9. LIMITATION

1. This study involves only urban based old age homes.

2. The diagnosis of some diseases was based on the Medical records available with the elders.

3. This study is an institution based study. Community based study on the health problems among elders will through more light on the real burden of health problems among the aged.

10. RECOMMENDATION

1. The Old age homes are to be actively participated in arranging periodical health check up to their inmates to identify the health problems for early diagnosis and treatment. This helps to check the further deterioration of the already existing conditions and enable elderly persons to lead full and active lives.

2. Elders need to be educated regarding their health problems and importance of regular treatment and follow up.

3. Overcrowding was seen in most of the old age homes, to overcome this problem standard regulations and norms to be developed and implemented strongly by the government regarding the living arrangements and facilities in the old age homes.

4. Inspite of the availability of leisure time activities in all the old age homes, it was found in the present study that 21% of elders do not have leisure time activities. In addition to leisure time activities, geriatric counseling services are also to be arranged in old age homes to address the psycho emotional problem of elders.

5. Government offered benefits are to be arranged for elders residing in old age homes. The management should made arrangements for the above.

6. Government can provide free medicines to the elders living in old age homes and to conduct mobile camps.

7. Multidisciplinary assessment on issues like socioeconomic problems, morbidity pattern, and psychological stress and social security needs of the elderly should be done on nationwide.

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ANNEXURE - 1

MODIFIED KUPPUSWAMY'S SOCIO - ECONOMIC STATUS SCALE (URBAN)

Education of head of family	**Score**
Professional	7
Graduate	6
Intermediate/Diploma	5
High school	4
Middle school	3
Primary school	2
Illiterate	1

Occupation	**Score**
Professional	10
Semi-profession	6
Clerical/shop-owner/farm er	5
Skilled worker	4
Semiskilled	3
Unskilled	2
Unemployed	1

Family income (Rs.)	**Score**
=19,575	12
9,788-19,574	10
7,323-9,787	6
4,894-7,322	4
2,936- 4,893	3
980- 2,935	2
<979	1

Socio-economic class:

Total Score	**Class**	**Description**
26 - 29	I	Upper class
16 – 25	II	Upper- middle
11 - 15	III	Lower-middle
5 – 10	IV	Upper- lower
Below 5	V	Lower

ANNEXURE- II

JNC VII Category

S.NO	JNC VII Category	SBP/DBP (mm Hg)
1.	Normal	<120/80
2.	Pre Hypertension	120-139/80-89
3.	Hypertension	≥140/90
	Stage I	140- 159/90-99
	Stage II	≥160/100

ANNEXURE- III

VOICE TEST

Grade of Impairment	Level tested with the Voice Test	Recommendations
Normal hearing	Able to hear whispers	---
Mild impairment	Able to hear and repeat words spoken in conversational voice at 1 metre.	Counseling Hearing aids may be needed.
Moderate impairment	Able to hear and repeat words using loud voice at 1 metre	Hearing aids usually recommended.
Severe impairment	Able to hear some words when shouted into the ear.	Hearing aids needed. If no hearing aids available, lip-reading and signing should be taught
Profound impairment (Deafness)	Unable to hear and understand even a shouted voice.	Hearing aids may help understanding words Additional rehabilitation needed. Lip-reading and sometimes signing essential

ANNEXURE - IV

GERIATRIC DEPRESSION SCALE (GDS)

Scoring Instructions:

Score 1 point for each bolded answer

1. Are you basically satisfied with your life? Yes/ **No**

2. Have you dropped many of your activities and interests? **Yes**/ No

3. Do you feel that your life is empty? **Yes** / No

4. Do you often get bored? **Yes** / No

5. Are you in good spirits most of the time? Yes/ **No**

6. Are you afraid that something bad is going to happen to you? **Yes** / No

7. Do you feel happy most of the time? Yes/ **No**

8. Do you often feel helpless? **Yes** / No

9. Do you prefer to stay at home, rather than going out and doing things? **Yes** / No

10. Do you feel that you have more problems with memory than most? **Yes** / No

11. Do you think it is wonderful to be alive now? **Yes** / No

12. Do you feel worthless the way you are now? Yes/ **No**

13. Do you feel full of energy? Yes/ **No**

14. Do you feel that your situation is hopeless? **Yes**/ No

15. Do you think that most people are better off than you are? **Yes**/ No

Total Score = [ ]

Interpretation:

1. Normal: 0 to 4
2. Mild depression: 5 to 8
3. Moderate depression: 8 to 11
4. Severe depression: 12 to 15

ANNEXURE-V

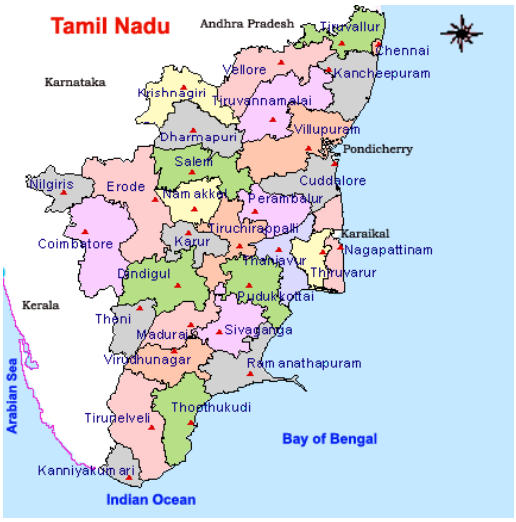
KATZ ACTIVITIES OF DAILY LIVING SCALE

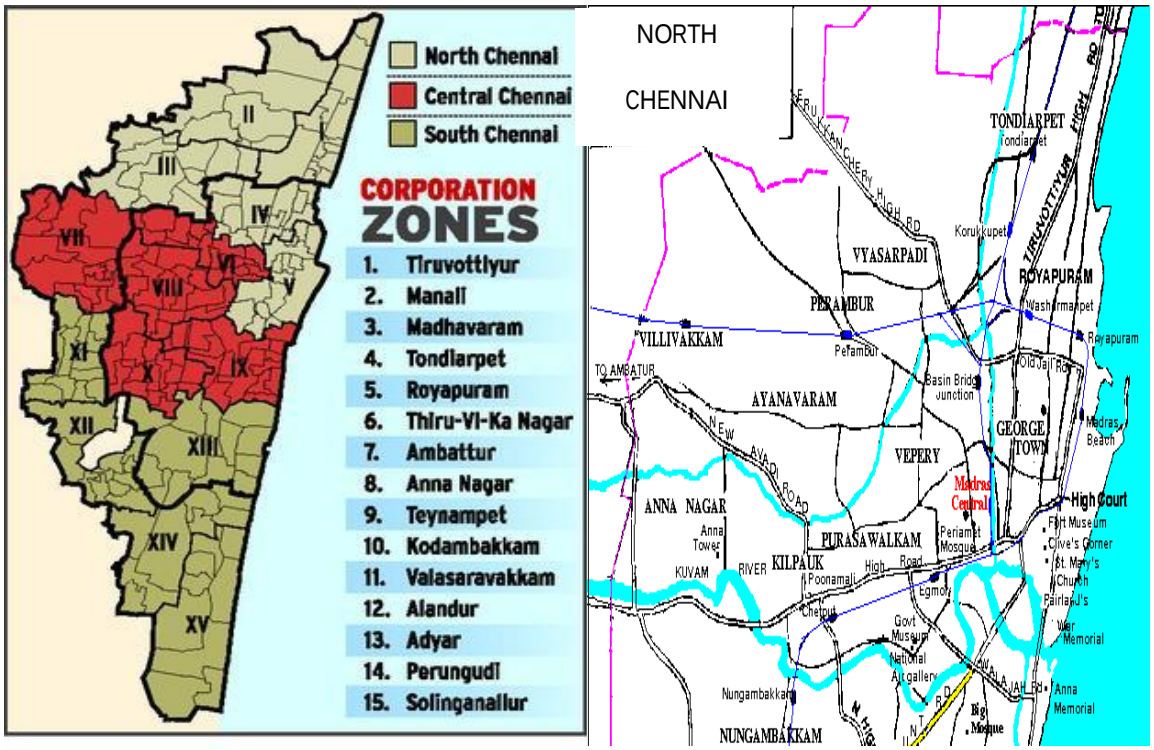
Activity	Item	Score
1. Eating	Eats without assistance	2
	Needs assistance in cutting meat, buttering Bread (in smashing food, getting food)	1
	Needs assistance in eating or is fed intravenously	0
2. Dressing	Gets clothes and dresses without assistance	2
	Needs assistance in tying shoes	1
	Needs assistance in getting clothes or in getting dressed or stays partly or completely undressed	0
3. Bathing	Bathes without assistance	2
	Needs assistance only in bathing one part of the body (eg. Back)	1
	Needs assistance in bathing more than one part of the body or does not bathe	0
4. Transferring	Moves in and out of bed and chair without Assistance (may use cane or walker)	2
	Needs assistance in moving in and out of bed or chair	1
	Does not get out of bed	0

Activity	Item	Score
5. Toileting	Goes to bathroom, uses toilet, cleans self, arranges clothes and returns without assistance (may use cane or walker for support and may use bedpan or urinal at night)	2
	Needs assistance in going to the bathroom, using toilet, cleaning self, arranging clothes, or returning	1
	Does not go to the bathroom to relieve bladder or bowel	0
6. Continence	Controls bladder and bowel completely (without occasional accidents)	2
	Occasionally loses control of bladder and bowel	1
	Needs supervision to control bladder or bowel, requires use of a catheter, or is incontinent	0

ANNEXURE VI

MAP OF CHENNAI CITY SHOWING THE STUDY AREA





ANNEXURES- VII

ZONES UNDER REGIONAL NORTH ZONE OF CHENNAI

1. Thiruvottiyur
2. Manali
3. Madhavaram
4. Tondiarpet
5. Royapuram

ANNEXURES- VIII

LIST OF OLD AGE HOMES IN NORTH ZONE OF CHENNAI

S.no	Name and address	Present strength	Number selected
1.	St.Thomas Home for Aged Vyasarbadi, Chennai-39	128	48
2.	Vuyiroli old age home Kilpauk, Chennai 600 010.	64	23
3.	Adrash old age home Rotapettah, Chennai – 14	59	17
4.	Happy home Kolathur, Chennai -99	53	23
5.	Dayakendra Old Age Home Purasawalkam, Chennai 600 007.	40	16
6.	Don Bosco Vyasarbadi, Chennai-39	75	29
7.	Trinity home Vepery , Chennai – 7	16	7
8.	Kanivu karangal, Manali , Chennai	29	12
9.	Little Sisters of the Poor Chennai 600 031.	152	44
10.	JC old age home Kolathur, Chennai -99	39	16
11.	Agape elders home R.A. Puram, Chennai-28	54	23
12.	MSPC Senior Citizen Home Washermanpet, Chennai 600 021	53	16

S.no	Name and address	Present strength	Number selected
13.	Friend-in-need Society Chennai 600 003	54	21
14.	Manogar & Rajaj of Venkatagiri Manogar Choultry road, Chennai 600 001.	124	35
15.	Nimmadhi old age home, R.A. Puram, Chennai-18	54	19
16.	Happy home, Perambur, Chennai -11	52	15
17.	The Madras Seva Sadan, Chetpet, Chennai 600 031	29	8
18.	J. C Home for the Aged Redhills, Chennai 600 060.	31	6
19.	Navajyoti Charities Trust R.A.Puram, Chennai- 600 028	46	12
20.	Senior Citizens Home, Royapettah, Chennai- 600 014	39	12
21.	Vasantha Vaasal, Madavaram, Chennai- 600 007	35	9
22.	Indian Counsil For Social Welfare, Egmore, Chennai- 600 028	28	8
23.	YMCA, Poonamallee High road, Chennai- 600 010	53	19
24.	St. George Cathedral Home for the Aged, Royapettah, Chennai- 600 014	45	12
	Total	**1352**	**450**

ANNEXURE - IX

INFORMATION SHEET

Title:

A Cross sectional study on the Prevalence of Health problems among Inmates of Old Age Homes in North zone of Chennai - 2012.

Ageing is a normal, inevitable, biological and universal phenomenon (park). It is the outcome of certain structural and functional changes taking place in different parts of the body as the life years increases. The common health problems in old age are Hypertension, Vision problems, Hearing problems, Arthritis, and Depression.

Older persons constitute one of the most vulnerable sections of the society. Ideally aged people should live in comfortable and friendly environment that can only the family can provide. But in this fast paced world it is becoming more and more difficult for the family to take of its elder members. Inevitably therefore, the care of the aged is slowly shifting from the family to community. For such people, old age homes are necessity. The purpose of the current study was to identify the prevalence of common health problems among inmates of old age homes in Chennai.

We request you participate in this study.

The privacy of the patients in the research will be maintained throughout the study. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared.

Taking part in this study is voluntary. You are free to decide whether to participate in this study or to withdraw at any time; your decision will not result in any loss of benefits to which you are otherwise entitled.

The results of the special study may be intimated to you at the end of the study period or during the study if anything is found abnormal which may aid in the management or treatment.

INFORMED CONSENT FORM

Title:

A Cross-sectional study on the Prevalence of Health problems among Inmates of Old Age Homes in North zone of Chennai - 2012.

Name of the participant: Participant ID:

Age :

(1) I have been explained in detail about the study and its procedure. I confirm that I had completely understood the study and have had the opportunity to ask questions.

(2) I understand that my participation in the study is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.

(3) I understand that the principal investigator, others working on the investigator's behalf, the Ethics Committee and the regulatory authorities will not need my permission to look at my health records both in respect of the current study and any further research that may be conducted in relation to it, even if I withdraw from the trial. I agree to this access. However I understand that my identity will not be revealed in any information released to third parties or published.

(4) I agree not to restrict the use of any data or results that arise from this study provided such a use is only for scientific purpose(s).

(5) I agree to take part in the above study.

Signature of investigator Signature of participant

_____ _____

Date:

ஆராய்ச்சி தகவல் தாள்

சென்னை வடக்கு மண்டலத்தில் உள்ள முதியோர் இல்லங்களில் வசிக்கும் முதியோர்களிடத்தில் நிலவும் உடல் குறைபாடுகள் பற்றி ஓர் ஆய்வு.

வயதாகுவதும் அதனால் ஏற்படும் நோய்களும் இயற்கையான நிகழ்வு என்றாலும் நீண்டகால நோய்களால் முதியோர்கள் பாதிக்கப்படுகின்றனர். நோய்களை தக்க முறையில் கண்டறிந்தும் அதற்கான மருத்துவத்தை முறையாக எடுத்துக்கொள்வதாலும் பின் விளைவுகளை நாம் தடுக்க முடியும். முதியோர் இல்லத்தில் வாழும் முதியோர்கள் தங்கள் உடல் நலத்தில் அதிக அக்கறை எடுத்துக்கொள்ள வேண்டும்.

நீங்கள் இந்த ஆராய்ச்சியில் பங்கேற்க நாங்கள் விரும்புகிறோம்.

இந்த ஆராய்ச்சியின் முடிவுகளை அல்லது கருத்துக்களை வெளியிடும் போதோ அல்லது ஆராய்ச்சியின் போதோ தங்களது பெயரையோ அல்லது அடையாளங்களையோ வெளியிட மாட்டோம் என்பதையும் தெரிவித்துக்கொள்கிறோம்.

இந்த ஆராய்ச்சியில் பங்கேற்பது தங்களுடைய விருப்பத்தின் பேரில் தான் இருக்கிறது. மேலும் நீங்கள் எந்நேரமும் இந்த் ஆராய்ச்சியிலிருந்து பின்வாங்கலாம் என்பதையும் தெரிவித்துக்கொள்ளலாம்.

இந்த சிறப்புப் பரிசோதனைகளின் முடிவுகளை ஆராய்ச்சியின் போது அல்லது ஆராய்ச்சியின் முடிவின் போது தங்களுக்கு அறிவிப்போம் என்பதையும் தெரிவித்துக்கொள்கிறோம்.

ஆராய்ச்சியாளர் கையொப்பம் பங்கேற்பாளர் கையொப்பம்

தேதி:

ஆராய்ச்சி ஒப்புதல் கடிதம்

ஆராய்ச்சி தலைப்பு: **சென்னை வடக்கு மண்டலத்தில் உள்ள முதியோர் இல்லங்களில் வசிக்கும் முதியோர்களிடத்தில் நிலவும் உடல் குறைபாடுகள் பற்றி ஓர் ஆய்வு.**

பெயர் : வயது : பால் :

ஆராய்ச்சி சேர்க்கை எண் : தேதி :

இந்த ஆராய்ச்சியின் விவரங்களும் அதன் நோக்கங்களும் முழுமையாக எனக்கு தெளிவாக விளக்கப்பட்டது.

எனக்கு விளக்கப்பட்ட விஷயங்களை நான் புரிந்து கொண்டு நான் எனது சம்மதத்தைத் தெரிவிக்கிறேன்.

இந்த ஆராய்ச்சியில் பிறரின் நிர்ப்பந்தமின்றி என் சொந்த விருப்பத்தின் பேரின் தான் பங்கு பெறுகிறேன் மற்றும் நான் இந்த ஆராய்ச்சியிலிருந்து எந்நேரமும் பின்வாங்கலாம் என்பதையும் அதனால் எந்த பாதிப்பும் ஏற்படாது என்பதையும் நான் புரிந்து கொண்டேன்.

இந்த ஆராய்ச்சியின் விவரங்களைக் கொண்ட தகவல் தாளைப் பெற்றுக் கொண்டேன். நான் என்னுடைய சுயநினைவுடன் மற்றும் முழு சுதந்திரத்துடன் இந்த மருத்துவ ஆராய்ச்சியில் என்னை சேர்த்துக் கொள்ள சம்மதிக்கிறேன்.

ஆராய்ச்சியாளர் மற்றும் வேரைச் சார்ந்தவர்களோ நெறிமுறைக்குழு உறுப்பினர்களோ நான் இந்த ஆராய்ச்சியிலிருந்து விலகினாலும் என்னுடைய அனுமதியின்றி எனது உடல்நிலை குறித்த தகவல்கள் இந்த ஆராய்ச்சிக்கோ இது தொடர்பான வேறு ஆராய்ச்சிக்கோ பயன்படுத்திக் கொள்ள முடியும் என்று புரிந்துக் கொண்டு சம்மதம் அளிக்கிறேன். ஆனாலும் எனது அடையாளம் வெளியிடப்பட மாட்டாது என்று புரிந்து கொள்கிறேன்.

இந்த ஆராய்ச்சியின் தகவல்களையும் முடிவுகளையும் அறிவியல் நோக்கத்ததிற்காக பயன்படுத்துவதற்கு நான் அனுமதிக்கிறேன். இந்த ஆராய்ச்சியில் பங்கு பெற நான் சம்மதிக்கிறேன்.

ஆராய்ச்சியாளர் கையொப்பம் பங்கேற்பாளர் கையொப்பம்

தேதி:

ANNEXURE- X

QUESTIONNAIRE - ENGLISH

Part A- Details regarding Old Age Home

1. Name of the home: Serial no:

2. Management: 1. Government 2. Private 3. Trust

3. Type of services 1. Free only 2. Paid only 3. Both

4. What are the criteria for admission in an old age home?

1. No family members to care
2. Able to pay institutional charges
3. Should be free from diseases
4. Able to take care of self

5. Maximum number of inmates that can be accommodated:

1. Males: 2. Females: 3. Total:

6. Present strength of inmates:

1. Males: 2. Females: 3. Total:

7. How many members are staying in a room/dormitory?

8. Average floor space per person:

9. Source of drinking water:

1. Corporation lorry water 2. Corporation pipe water

3. Bore water 4. Hand pump

10. Food supply 1. Vegetarian 2. Mixed diet

11. Availability of recreational facilities

1. TV 2. Radio 3. News paper 4. Indoor games

12. Availability of medical service

1. Residential 2. Periodical 3. On call 4. By referral

Part B- Details regarding individuals

13. Name

14. Age

15. Sex 1. Male 2. Female

16. Religion 1. Hindu 2. Christian 3. Muslim

17. Community

1. Forward community 2. Backward community

3. Most backward community 4. Scheduled caste/Scheduled tribes

5. Others

18. Education

1. Illiterate 2. Primary 3. Middle school 4. High school

5. Higher secondary school 6. Graduation 7. Post graduate

19. Occupation:

1. Unemployed 2. Unskilled 3. Semiskilled 4. Skilled
5. Clerical 6. Semi professional 7. Professional

20. Previous income per month:

1. <979 2. 980- 2,935 3. 2,936- 4,893

4. 4,894-7,322 5. 7,323-9,787 6. 9,788-19,574 7. >19,575

21. Marital status

1. Unmarried 2. Married and Spouse alive

3. Married and separated 4. Widow 5. Widower

22. If Married and Spouse alive, where do the spouse reside?

1. In same old age home 2. In some other home

3. With family 4. Not known

23. What is the type of family when you are living in your house?

1. Joint family 2. Nuclear family 3. Lived alone

24. Smoking habit: 1. Current smokers 2. Ex smokers

3. Non smokers

25. Alcohol intake: 1. Current alcoholic 2. Ex alcoholic

3. Non alcoholic

26. Other habits: 1. Betel leaves chewing 2. Snuff

27. Hypertension

1. Have you ever been told that you have high blood pressure by a doctor?

1. Yes 2.No

i. If yes,

A. Are you on medications for hypertension? 1. Yes 2.No

B. How many years are you on treatment?

1. Less than 3 year 2. 3 – 6 year 3. 6 – 9 year 4. More than 9 year

C. Do you take medications regularly? 1. Yes 2.No

ii. If no, what are the reasons?

1. No physician in the home 2. Non availability of drugs

3. Non availability of attenders 4. Distance

2. How frequently you will have a health check up by a doctor?

1. Once in 15 days 2. Once in a month 3. Once in 3 - 6 months

4. More than 6 months

3. Have you suffered from any complications of hypertension like heart attack, heart failure, coronary artery disease and stroke? 1. Yes 2.No

4. Any of your family members had Hypertension? 1. Yes 2.No 3. Don't know

28. Diabetes Mellitus

1. Have you ever been told that you have diabetes mellitus by a doctor?

1. Yes 2.No

i. If yes,

A. Are you on medications for diabetes? 1. Yes 2.No

B. How many years are you on treatment?

1. Less than 3 year 2. 3 – 6 year 3. 6 – 9 year 4. More than 9 year

C. Do you take medications regularly? 1. Yes 2.No

ii. If no, what are the reasons?

1. No physician in the home 2. Non availability of drugs

3. Non availability of attenders 4. Distance

2. How frequently you will have a health check up by a doctor?

1. Once in 15 days 2. Once in a month

3. Once in 3 - 6 months 4. More than 6 months

3. Have you suffered from any complications of diabetes like (heart attack, chronic ulcers in the foot, coronary artery disease)? 1. Yes 2.No

4. Any of your family members had diabetes mellitus? 1. Yes 2.No 3. Don't know

29. Vision

1. Do you have any difficulty in seeing the objects? 1. Yes 2.No

i. If yes, how long?

1. Less than 1 year 2. 1- 2 year 3. 2 - 3 year 4. More than 3 year

2. Have you consulted Eye specialist for your visual problem? 1. Yes 2. No

i. If no, what are the reasons?

1. Distance 2. No money to pay 3. Non availability of attenders

4. Satisfied with the vision they had

3. Have you been operated for cataract/ any other eye problem? 1. Yes 2.No

i. If yes, what is the frequency of eye checks up after cataract surgery?

1. Once in 3 months 2. Once in 6 months 3. Once in a year

4. No Eye check up

30. Arthritis

1. Do you have any joint pain? 1. Yes 2.No

2. Do you have any joint swelling? 1. Yes 2.No

3. Do you have any restriction of movement?1. Yes 2.No

4. i. If yes, taking any treatment? 1. Yes 2.No

ii. If no, what are the reasons?

1. Difficulty in walking 2. Non availability of attenders 3. Distance

4. Non availability of medicines 5. Not useful.

31. Hearing

1. Do you have any difficulty in hearing? 1. Yes 2.No

A. If yes, are you using any hearing aid? 1. Yes 2.No

2. If yes to Q.no 40 and no to Q.no 40. A

i. What are the reasons?

1. Not available 2. Expensive 3. Not useful 4. Not aware about hearing aid

32. Depression (Geriatric depression scale)

1. Are you basically satisfied with your life? Yes/ **No**

2. Have you dropped many of your activities and interests? **Yes**/ No

3. Do you feel that your life is empty? **Yes** / No

4. Do you often get bored? **Yes** / No

5. Are you in good spirits most of the time? Yes/ **No**

6. Are you afraid that something bad is going to happen to you? **Yes** / No

7. Do you feel happy most of the time? Yes/ **No**

8. Do you often feel helpless? **Yes** / No

9. Do you prefer to stay at home, rather than going out and doing things? **Yes** / No

10. Do you feel that you have more problems with memory than most? **Yes** / No

11. Do you think it is wonderful to be alive now? **Yes** / No

12. Do you feel worthless the way you are now? Yes/ **No**

13. Do you feel full of energy? Yes/ **No**

14. Do you feel that your situation is hopeless? **Yes**/ No

15. Do you think that most people are better off than you are? **Yes**/ No

Total Score = [ ]

33. Admission in old age home by whom?

1. Self 2. Family members 3. Friends 4. Neighborhood 5. Help Age India

34. Reason for Institutionalization

1. Economic insufficiency

2. Health problems

3. Didn't want to be a hindrance for the family members

4. No family members alive to take care

5. Neglect by family members

6. Children living in another place

7. Abuse by family members

35. Duration of stay in old age home

1. Less than 6 month 2. 6 month - 1 year 3. 1 year - 5 year

4. More than 5 year

36. Current income 1. Yes 2. No

37. Source of current income

1. Retirement pension 2. Old age pension 3. From family members

38. Financial dependency 1. Yes 2. No

39. Family contacts 1. Yes 2. No

A. If yes, how often? 1. Monthly once 2. 1 – 3 months 3. 3 – 6 months 4. > 6 months

40. Leisure time activities

1. Television 2. Radio 3. News paper 4. Maintenance work 5. Prayer

6. No leisure time activity

41. Activities of daily living scale (Katz index)

1. Eating [ ]

2. Dressing [ ]

3. Bathing [ ]

4. Transferring [ ]

5. Toileting [ ]

6. Continence [ ]

42. Utilization of health services at time of illness 1. Yes 2. No

i. If yes, what type of health services?

1. Old age home doctor 2. Private 3. Government 4. Others

ii. If No, what is the reason for non utilization of health services?

1. Distance 2. No money to pay 3. Non availability of attendants

4. Inability to walk

43. Do you know any benefits to old people offered by government?

1. Yes 2.No 3. Don't know

i. If yes, do you get any benefits? 1. Yes 2.No

A. If yes, what benefits?

44. Medical Records and Treatment history:

45. Examination:

Height (cm): Weight (kg):

BMI: Waist circumference:

BP: mmHg

1 st reading: 2 nd reading: 3 rd reading:

Vision Right eye Left eye

Visual acuity

Hearing Right ear Left ear

Voice test

Joint

Swelling

சென்னை வடக்கு மண்டலத்தில் உள்ள முதியோர் இல்லங்களில் வசிக்கும் முதியோர்களிடத்தில் நிலவும் உடல் குறைபாடுகள் பற்றி ஓர் ஆய்வு.

வினாப்பட்டி

பகுதி–1 : முதியோர் இல்லத்தின் விவரங்கள்

1. முதியோர் இல்லத்தின் பெயர்:

2. நடத்துபவர் : 1. தனியார் 2. அரசு
   3. தொண்டு நிறுவனம்

3. சேவையின் முறை : 1. இலவசம் 2. கட்டணம்
   3. இரண்டும்

4. முதியோர்கள் சேர்க்கைக்கான விதிமுறைகள் :
   1. ஆதரவற்றோர்
   2. முதியோர் இல்லக் கட்டணம் செலுத்துபவர்
   3. தன் வேலையை தானே செய்பவர்
   4. கொடிய நோய்கள் இல்லாமை

5. முதியோர்களின் இருப்பிடம் [அதிகபட்சமாக]:
   1. ஆண்கள் :
   2. பெண்கள் :
   3. மொத்தம் :

6. தற்போதைய முதியோர்களின் விவரம் :
   1. ஆண்கள் :
   2. பெண்கள் :
   3. மொத்தம் :

7. எத்தனை முதியோர்கள் ஒரு அறையில் தங்குகின்றனர்?

8. ஒரு அறையின் இடவசதி :

9. குடிநீர் : 1. மாநகராட்சி லாரி தண்ணீர்
   2. மாநகராட்சி குழாய் தண்ணீர்
   3. நிலத்தடி நீர்
   4. அடி குழாய்

10. உணவு முறை : 1. சைவம் 2. சைவம்/அசைவம்

11. பொழுது போக்கு நிகழ்வுகளின் விவரங்கள் :

1. தொலைகாட்சி
2. வானொலி
3. செய்தித்தாள்
4. உள்ளிட விளையாட்டு
5. மற்றவை

12. மருத்துவ வசதிகளின் விவரங்கள்:

1. முதியோர் இல்லம் சார்ந்தது
2. குறிப்பிட்ட நாட்களில் மருத்துவர் வருகை
3. அழைப்பின் பேரில் மருத்துவர் வருகை
4. முதியோர்களை நேரடியாக அனுப்புதல்

<u>பகுதி –2 : முதியோர்களின் விவரங்கள்</u>

13. பெயர் : வரிசை எண் :

14. வயது : 1] 60–65 2] 66–70 3] 71–75 4]76–80 5]>80

15. பாலினம் : 1] ஆண் 2] பெண்

16. மதம் : 1] இந்து 2] முஸ்லீம் 3] கிறிஸ்துவர் 4] மற்றவை

17. ஜாதி :

18. கல்வித்தகுதி : 1] படிப்பறிவற்றவர் 2] ஆரம்ப கல்வி
3] இடைகால கல்வி 4] உயர்கல்வி
5]உயர்நிலைகல்வி 6] பட்டதாரி 7] மேல்பட்டதாரி

19. தொழில் :

20. முந்தைய மாத வருமானம் :

21. திருமண நிலை :

1] மணமாகாதவர் 2] மணமானவர் துணைவர் உயிருடன் உள்ளார்
3] மணமானவர் துணைவரிடமிருந்து பிரிந்துள்ளவர்
4] விதவை

22. திருமணமானவர் துணைவர் உயிருடன் உள்ளார், துணைவர் இருக்குமிடம்.
1] அதே முதியோர் இல்லத்தில் 2] வேறு முதியோர் இல்லத்தில்
3] குடும்பத்தாரிடம் 4] தெரியவில்லை

23. உங்களின் குடும்பம் எந்தவகையினை சேர்ந்தது?
1] தனி குடும்பம் 2] கூட்டு குடும்பம்
3] தனியே வாழுதல்

24. புகை பிடிக்கும் பழக்கம்
1] தற்போது புகைபிடிப்பவர் 2] முன்னாள் புகைபிடித்தவர்
3] புகை பழக்கம் இல்லாதவர்

25. குடி பழக்கம் 1] தற்போது 2] முன்னாள் 3] குடி பழக்கம் இல்லாதவர்

26. மற்ற பழக்கவழக்கங்கள்
1] வெற்றிலை பாக்கு போடுதல் 2] மூக்கு பொடி

இரத்த அழுத்தம்

27. தங்களுக்கு உயர்இரத்த அழுத்தம் உள்ளது என்று மருத்துவர் கண்டறிந்து சொல்லியிருக்கிறாரா?
1] ஆம் 2] இல்லை

அ] ஆம் என்றால் தாங்கள் அதற்கான மருத்துவத்தில் உள்ளீர்களா?
1] ஆம் 2] இல்லை

ஆ] ஆம் என்றால் எத்தனை வருடங்கள் மருத்துவத்தில் உள்ளீர்கள்?

இ] தாங்கள் தவறாமல் மருந்துகளை எடுத்துக் கொள்கிறீர்களா?
1] ஆம் 2] இல்லை

28. எத்தனை நாட்களுக்கு ஒரு முறை பரிசோதனைக்காக மருத்துவரை அணுகுவீர்கள்?

29. தங்களுக்கு இதுவரை இருதய நோய்கள், பக்கவாதம், போன்ற பின்விளைவுகள் உயர்இரத்த அழுத்தத்தால் வந்திருக்கிறதா?
1] ஆம் 2] இல்லை

30. தங்கள் குடும்பத்தில் யாரேனும் உயர்இரத்த அழுத்தத்தால் பாதிக்கப்பட்டிருக்கின்றனரா?
1] ஆம் 2] இல்லை

சர்க்கரை வியாதி

31. தங்களுக்கு சர்க்கரை வியாதி உள்ளது என்று மருத்துவர் கண்டறிந்து சொல்லியிருக்கிறாரா?
1] ஆம் 2] இல்லை

அ] ஆம் என்றால் தாங்கள் அதற்கான மருத்துவத்தில் உள்ளீர்களா?
1] ஆம் 2] இல்லை

ஆ] ஆம் என்றால் எத்தனை வருடங்கள் மருத்துவத்தில் உள்ளீர்கள்?

இ] தாங்கள் தவறாமல் மருந்துகளை எடுத்துக் கொள்கிறீர்களா?
1] ஆம் 2] இல்லை

32. எத்தனை நாட்களுக்கு ஒரு முறை பரிசோதனைக்காக மருத்துவரை அணுகுவீர்கள்?

33. தங்களுக்கு இதுவரை இருதய நோய்கள், நீண்ட கால காயங்கள், போன்ற பின்விளைவுகள் சர்க்கரை வியாதியால் வந்திருக்கிறதா?
1] ஆம் 2] இல்லை

34. தங்கள் குடும்பத்தில் யாரேனும் சர்க்கரை வியாதியால் பாதிக்கப்பட்டிருக்கின்றனரா?
1] ஆம் 2] இல்லை

கண் பார்வை

35. தங்களுக்கு பொருட்களை காண்பதில் ஏதேனும் சிரமம் இருக்கிறதா?
1] ஆம் 2] இல்லை

36. தாங்கள் இதுவரை கண்பார்வை குறைபாட்டிற்காக கண் மருத்துவரை அணுகி இருக்கிறீர்களா?
1] ஆம் 2] இல்லை

37. தாங்கள் இதற்கு முன்னால் கண் புரை அல்லது வேறு ஏதேனும் நோய்க்காக கண்ணில் அறுவை சிகிச்சை செய்திருக்கிறீர்களா
1] ஆம் 2] இல்லை

அ] ஆம், என்றால் தாங்கள் எத்தனை நாட்களுக்கு ஒரு முறை கண் மருத்துவரை பரிசோதனை கொண்டிருக்கிறீர்கள.?

மூட்டு வலி

38. தங்களுக்கு மூட்டு வலி போன்ற பிரச்சனைகள் இருக்கிறதா?
1] ஆம் 2] இல்லை

39. தங்களுக்கு மூட்டு வீங்கி இருக்கிறதா?
1] ஆம் 2] இல்லை

40. தங்களுக்கு மூட்டுகளை அசைக்கும் போது சிரமம் உள்ளதா?
1] ஆம் 2] இல்லை

அ] தாங்கள் மூட்டு வலியிலிருந்து விடுபெற என்ன செய்கிறீர்கள்?

காது கேட்கும் திறன்

41. தங்களுக்கு காது கேட்பதில் ஏதேனும் சிரமம் இருக்கிறதா?
1] ஆம் 2] இல்லை

அ] தாங்கள் ஏதேனும் காது கேட்கும் கருவிகளை பயன்படுத்துகிறீர்களா?
1] ஆம் 2] இல்லை

42. இல்லை என்றால் அதற்கான காரணங்கள்?

43. மன அழுத்தம்

1. உங்கள் வாழ்க்கை உங்களுக்கு திருப்தியாக உள்ளதா? ஆம் / **இல்லை**

2. தங்களுடைய வேலைகள் மற்றும் ஆர்வம் இவற்றில் ஏதேனும் தொய்வு காணப்படுகிறதா? **ஆம்** / இல்லை

3. உங்கள் வாழ்க்கை ஒன்றுமில்லை என்று நீங்கள் எப்பொழுதாவது நினைத்திருக்கிறீர்களா? **ஆம்** / இல்லை

4. தங்களுக்கு அடிக்கடி வெறுப்பாக உள்ளதா? **ஆம்** / இல்லை

5. பெரும்பாலான நேரங்களில் நல்லபடியான எண்ணங்களை நிலவுகின்றனவா? ஆம்/ **இல்லை**

6. ஏதேனும் தவறான செயல் நடக்கப்போகிறது என்று தங்களுக்கு பயமாக உள்ளதா? **ஆம்**/ இல்லை

7. பெரும்பாலான நேரங்களில் தாங்கள் மகிழ்ச்சியாக இருக்கிறீர்களா? ஆம்/ **இல்லை**

8. உங்களுக்கு உதவ யாரும் இல்லை என்று நீங்கள் அடிக்கடி நினைக்கிறீர்களா? **ஆம்** / இல்லை

9. நீங்கள் வெளியே செல்வது மற்றும் செயல்கள் செய்வதை விட அறையில் இருப்பதே மேல் என நினைக்கிறீர்களா? **ஆம்** / இல்லை

10. தங்களுக்கு ஞாபக சக்தியில் ஏற்படும் பிரச்சனைகளே மற்றவை விட அதிகம் என நினைக்கிறீர்களா? **ஆம்** / இல்லை

11. நீங்கள் வாழ்வதை அருமையான விஷயமாக கருதுகிறீர்களா? **ஆம்** / இல்லை

12. நீங்கள் தற்போது இருக்கும் நிலை மதிப்பு இல்லாதது என நினைக்கிறீர்களா? ஆம் / **இல்லை**

13. நீங்கள் முழுமையாக ஆற்றல் உடையவர் என்று நினைக்கிறீர்களா? ஆம் / **இல்லை**

14. உங்களின் தற்போதைய சூழ்நிலை நம்பிக்கையில்லாதது என நினைக்கிறீர்களா? **ஆம்** /இல்லை

15. மற்றவர்கள் என்னை விட மேலாக இருக்கிறார்கள் என நீங்கள் நினைக்கிறீர்களா? **ஆம்** / இல்லை

மொத்த மதிப்பெண் =[ ]

44. முதியோர் இல்லத்திற்கு யாரால் சேர்க்கப்பட்டீர்கள்?
1] தானே 2] குடும்பத்தார் 3] நண்பர்கள் 4] பக்கத்து வீட்டார்

45. முதியோர் இல்லம் வந்ததற்கான காரணம்?
1] போதிய பண வசதி இல்லை
2] நோய்கள்
3] வீட்டிற்கு பாரமாக இருக்க விருப்பமில்லை
4] குடும்பத்தார் யாரும் இல்லை
5] குடும்பத்தாரால் ஒதுக்கப்பட்டேன்
6] குழந்தைகள் வெளி ஊரில் உள்ளனர்
7] குழந்தைகளால் பார்த்துக்கொள்ள நேரமில்லை
8] குழந்தைகளால் அவமதித்தல்
9] மற்றவை

46. முதியோர் இல்லத்தில் எத்தனை நாட்களாக இருக்கிறீர்கள்?

47. தற்போதைய வருமானம் : 1] ஆம் 2] இல்லை

48. தற்போதைய வருமானம் யாரிடமிருந்து? :
1] ஓய்வு ஊதியம் 2] முதியோர் ஊதியம் 3] குடும்பத்தாரிடம்

49. பணத்திற்காக யாரேனும் சார்ந்திருக்கிறீர்களா?
1] ஆம் 2] இல்லை

50. குடும்பத்தாருடன் தொடர்பு இருக்கிறதா?
1] ஆம் 2] இல்லை
அ] ஆம் என்றால் எத்தனை நாட்களுக்கு ஒரு முறை?

51. பொழுதுபோக்குகள்
1] தொலைகாட்சி
2] வானொலி
3] செய்தித்தாள்
4] முதியோர் இல்ல பராமரிப்பு வேலைகள்
5] கோவிலுக்கு செல்லுதல்
6] உள்ளிட விளையாட்டுகள்

52. **காட்ஸ் இன்டெக்ஸ்**

53. தாங்கள் நோயினால் அவதியுறும் பொழுது மருத்துவ வசதிகளை பயன்படுத்துகிறீர்களா?
1] ஆம் 2] இல்லை

அ] ஆம் என்றால், யாரிடம்?
1] முதியோர் இல்ல மருத்துவர்
2] தனியார் மருத்துவர்
3] அரசு மருத்துவர்
4] மற்றவை

ஆ] இல்லை என்றால், காரணம்?
1] தூரம்
2] பணம் இல்லை
3] கூட்டி செல்ல யாரும் இல்லை
4] மற்றவை

54. அரசு வயதானவர்களுக்கு அளிக்கும் சலுகைகளை பற்றி உங்களுக்கு தெரியுமா? 1] ஆம் 2] இல்லை 3] தெரியாது

அ] ஆம் என்றால், நீங்கள் ஏதேனும் சலுகையை பெறுகிறீர்களா?
1] ஆம் 2] இல்லை

ஆ] ஆம் என்றால், என்ன சலுகை?

மருத்துவ குறிப்புகள் மற்றும் சிகிச்சை குறிப்புகள்:

முதியோர்களின் ஆய்வு:

ANNEXURE XI

ANNEXURE XII

S.no	MANAGEN	TYPE OF SI	CRITERIA	MEMBERS	FLOOR SPA	DRINKING	FOOD	RECREATIC	MEDICAL	AGE	SEX	RELIGION	COMMUNI	EDUCATIO	OCCUPATI	PREVIOUS	CURRENT I	SOURCE OI	MARITAL S	SPOUSE RE	TYPE OF FA	SMOKING	ALCOHOL I	OTHER AD	ADMISSIO	REASON F	DURATION	FAMILY CC	HOW OFTE	FINANCIA	LEISURE T	HT TOLD BY DO	FAMILY V	DM TOLD BY DOC	FAMILY W	SEEING D	DURATI	EYE SU	WHAT	HEARING DI	DURATION OF HE	USING HEA	WHY NOT	JOINT PAI	DURATION	DEPRESSIC	SYSTEM O	UTILIZATIC	HEIGHT	WEIGHT	WAIST CIR	BP	VISUAL AC	WHISPER T	SWELLING	TENDERNESS
1	1	1	3	2	80	1	2	2	2	5	2	3	4	3	2	4	2	0	4	0	2	3	3	0	4	4	4	2	0	1	0	1	1	1	2	1	4	1	1	1	3	1	0	2	0	2	1	2	140	48	80	1	3	4	2	2
2	1	1	1	3	90	1	2	1	3	3	2	3	4	1	3	3	2	0	4	0	2	3	3	0	2	3	1	1	1	1	1	1	1	2	0	1	1	2	0	2	0	0	0	2	0	0	1	1	145	43	85	2	2	1	2	2
3	2	2	1	2	86	3	2	1	1	4	2	1	2	1	5	4	2	0	4	0	2	3	3	0	4	4	4	2	0	1	0	1	1	2	0	1	4	2	0	1	4	2	2	2	0	0	3	2	158	30	63	3	3	2	2	2
4	3	3	3	1	100	2	1	2	2	4	2	1	2	1	2	3	1	3	4	0	2	3	3	0	2	3	4	2	0	1	0	1	0	2	0	1	2	1	1	2	0	0	0	2	0	0	3	1	150	37	69	3	2	2	2	2
5	1	3	2	3	80	1	1	3	2	1	2	3	4	1	3	3	2	0	4	0	2	3	3	0	5	2	4	1	1	1	1	1	0	1	1	1	1	1	1	2	0	0	0	1	2	0	1	1	146	60	90	3	2	0	1	2
6	2	1	1	2	90	1	1	1	3	4	2	1	2	1	3	2	2	0	1	0	3	3	3	0	1	4	3	2	0	1	1	1	0	2	0	1	1	1	1	1	2	2	2	1	4	1	1	1	140	47	81	3	2	1	1	2
7	2	1	1	2	110	2	1	2	1	5	2	1	2	2	2	1	2	0	4	0	2	3	3	0	1	1	4	2	0	1	0	1	0	1	0	1	1	1	1	2	0	0	0	1	4	2	1	2	138	40	79	3	2	1	1	2
8	3	3	2	5	150	2	1	2	1	1	2	3	4	1	2	2	2	0	4	0	1	3	3	0	2	3	4	1	1	1	2	1	0	1	0	2	0	2	0	2	0	0	0	2	0	0	1	1	162	70	96	3	1	0	2	2
9	1	2	2	1	120	1	1	3	1	1	2	1	2	1	3	2	2	0	1	0	3	3	3	0	4	4	3	2	0	1	2	1	0	1	0	1	1	1	1	2	0	0	0	1	3	0	1	1	147	36	70	3	3	0	1	2
10	1	1	1	2	130	1	1	1	1	3	2	1	2	1	4	4	2	0	4	0	2	3	3	0	4	4	3	1	2	1	1	1	0	1	0	2	0	1	1	1	2	2	1	2	0	0	1	1	148	39	68	1	1	2	2	2
11	2	1	1	3	110	2	1	1	2	3	2	1	2	1	4	3	2	0	4	0	2	3	3	0	2	2	2	2	0	1	4	1	0	1	0	1	2	2	0	1	1	2	3	2	0	3	1	1	145	40	78	3	2	1	2	2
12	3	2	2	8	70	3	1	1	3	2	2	3	4	2	4	3	2	0	4	0	2	3	3	0	2	3	3	2	0	1	3	1	0	2	0	1	2	1	1	1	1	2	2	2	0	0	1	1	146	52	88	3	2	0	2	2
13	3	2	3	2	50	2	1	1	3	2	2	1	1	1	2	3	2	0	4	0	2	3	3	0	2	3	4	2	0	1	2	1	0	2	0	1	2	1	1	2	0	0	0	1	2	0	1	1	150	40	78	1	2	0	1	1
14	1	1	2	2	80	2	1	2	1	2	2	1	3	1	1	0	2	0	2	2	2	3	3	1	4	4	1	2	0	1	2	2	0	2	0	1	1	2	0	2	0	0	0	1	2	4	1	1	149	54	86	3	2	0	1	1
15	2	1	2	2	90	1	1	3	1	5	2	1	2	1	3	3	2	0	4	0	1	3	3	0	1	4	3	2	0	1	0	2	0	2	0	1	1	1	1	1	1	1	0	1	3	0	1	2	149	38	70	3	1	3	1	2
16	3	2	1	2	50	2	1	3	3	5	2	1	3	2	2	3	2	0	4	0	2	3	3	0	1	4	4	1	1	1	0	1	0	2	0	2	0	1	1	1	4	1	0	2	0	0	1	1	145	47	80	1	1	2	2	2
17	3	3	2	3	60	2	1	1	2	2	2	1	3	1	2	4	1	3	2	4	1	3	3	0	2	2	3	2	0	1	1	1	0	2	0	2	0	2	0	1	4	2	2	1	1	0	1	1	142	40	82	3	2	0	1	2
18	1	2	2	3	80	3	1	1	1	3	2	3	4	1	2	3	2	0	4	0	2	3	3	1	2	2	3	2	0	1	3	1	0	2	0	1	2	2	0	1	3	2	3	2	0	1	1	1	133	43	79	3	2	0	2	2
19	1	2	3	3	110	3	1	3	1	4	2	1	2	3	3	3	2	0	4	0	2	3	3	0	5	3	3	2	0	1	3	1	0	2	0	1	1	1	1	2	0	0	0	1	2	1	1	1	148	75	102	2	2	1	1	2
20	1	1	3	2	110	1	1	2	2	3	2	3	4	4	4	2	1	3	4	0	2	3	3	0	4	4	2	2	0	1	3	1	2	2	0	1	2	1	1	2	0	0	0	2	0	0	1	1	143	53	89	3	1	0	2	2
21	2	2	1	2	120	2	1	1	2	2	2	1	2	3	4	2	2	0	4	0	1	3	3	0	2	2	4	2	0	1	0	1	2	2	0	1	1	1	1	2	0	0	0	1	3	0	1	1	145	35	69	1	2	0	1	2
22	3	2	2	2	110	2	1	1	1	5	2	1	3	1	1	0	2	0	4	0	2	3	3	0	2	2	4	1	3	1	0	2	0	2	0	1	2	1	1	1	2	1	0	2	0	0	1	2	140	33	70	3	2	2	2	2
23	3	3	2	3	150	1	1	2	1	3	2	2	2	2	2	2	2	0	4	0	2	3	3	0	2	2	3	1	2	1	0	2	0	1	2	1	2	1	1	1	1	2	2	1	3	1	1	1	140	40	81	3	2	0	1	1
24	1	3	1	2	140	3	1	2	2	1	2	1	2	1	4	3	2	0	4	0	2	3	3	1	2	2	4	1	2	1	1	1	0	2	0	2	0	1	1	1	2	2	4	2	0	0	3	1	146	76	107	3	1	0	2	2
25	1	1	3	2	100	2	1	1	3	5	2	3	4	2	3	2	2	0	4	0	2	3	3	0	1	1	2	1	1	1	0	1	0	2	0	1	3	2	0	1	1	2	4	2	0	0	1	2	149	65	85	2	2	1	2	2
26	3	2	2	6	50	2	1	1	2	4	2	3	4	3	5	5	2	0	4	0	2	3	3	0	1	2	1	2	0	1	0	0	0	1	0	1	4	2	0	1	4	2	2	1	3	2	1	1	141	48	76	3	3	0	1	1
27	2	2	2	5	80	1	1	2	2	1	2	3	4	1	5	3	2	0	1	0	3	3	3	0	5	4	3	2	0	1	4	1	0	2	0	1	2	2	0	2	0	0	0	2	0	0	1	1	150	55	79	3	1	0	2	2
28	1	1	1	2	150	1	1	3	1	5	2	1	2	1	4	3	2	0	4	0	1	3	3	1	2	2	4	1	3	1	0	1	0	2	0	1	4	1	1	1	2	2	2	2	0	0	1	1	140	36	75	2	3	2	2	2
29	1	3	1	3	180	2	1	2	2	3	2	3	4	1	2	2	2	0	4	0	1	3	3	0	1	3	4	2	0	1	2	0	0	2	0	2	0	1	1	1	2	2	3	1	4	0	1	1	145	74	101	1	1	0	1	2
30	2	2	2	2	120	3	1	2	2	5	2	1	2	1	2	3	2	0	4	0	2	3	3	0	2	6	3	2	0	1	0	0	0	1	0	1	2	1	1	1	1	1	0	2	0	1	1	2	147	46	80	2	2	2	2	2
31	2	2	3	2	130	1	1	1	3	5	2	1	1	2	4	3	2	0	4	0	2	3	3	0	1	5	3	1	1	1	0	0	0	2	0	1	2	1	1	1	2	2	1	2	0	0	1	2	133	25	72	1	2	2	2	2
32	1	1	1	2	150	2	1	2	3	2	2	3	4	3	2	2	2	0	2	2	2	3	3	0	5	4	3	2	0	1	3	1	1	2	0	1	4	1	1	2	0	0	0	1	1	0	3	1	140	46	84	2	2	0	1	2
33	1	1	2	3	140	2	1	2	4	3	2	1	2	3	3	3	2	0	4	0	1	3	3	0	4	4	3	1	2	1	2	1	1	2	0	1	2	1	1	2	0	0	0	1	2	0	1	1	153	75	104	3	2	1	1	2
34	2	2	2	1	110	3	1	3	2	2	2	1	2	2	2	2	2	0	4	0	2	3	3	0	2	3	3	2	0	1	1	1	3	2	0	1	1	2	0	2	0	0	0	1	1	0	1	1	148	55	95	2	2	0	1	2
35	3	3	3	2	180	1	1	3	2	5	2	1	2	1	3	3	1	3	4	0	2	3	3	0	2	2	4	1	4	2	0	1	0	2	0	1	4	1	1	2	0	0	0	1	3	2	1	1	141	40	78	2	2	2	1	1
36	2	1	1	2	120	1	2	4	1	1	2	3	4	1	4	3	1	3	1	0	3	3	3	0	2	2	4	2	0	2	4	0	0	2	0	1	4	1	1	2	0	0	0	2	0	0	1	1	150	45	88	1	2	0	2	2
37	2	2	1	3	110	1	1	2	3	2	1	3	4	2	6	3	2	0	5	0	2	3	3	0	4	7	2	1	3	1	2	1	0	2	0	1	2	1	1	1	4	2	1	2	0	3	3	1	155	45	78	3	2	0	2	2
38	1	2	1	2	140	1	2	2	2	1	1	1	2	2	4	3	1	3	5	0	2	3	3	0	2	8	3	2	0	1	3	0	0	2	0	2	0	2	0	2	0	0	0	2	0	4	1	1	154	60	90	1	1	0	2	2
39	2	3	1	3	50	2	2	1	2	4	1	1	2	1	1	0	1	1	5	0	1	2	2	0	1	4	2	1	1	2	0	1	0	2	0	1	3	1	1	2	0	0	0	2	0	0	2	1	159	56	91	2	3	2	2	2
40	2	1	2	3	80	3	2	3	4	1	1	3	4	3	2	3	2	0	5	0	2	3	3	0	1	3	3	2	0	1	3	1	0	1	0	2	0	1	1	2	0	0	0	2	0	0	1	1	150	45	84	3	1	0	2	2
41	3	1	3	1	90	3	2	2	1	2	1	3	4	1	2	2	2	0	5	0	2	3	3	0	2	2	1	2	0	1	4	1	0	2	0	1	2	1	1	1	3	2	1	2	0	0	1	1	165	38	78	3	3	0	2	2
42	3	1	3	1	50	1	2	2	2	1	1	3	4	2	5	3	2	0	5	0	1	2	2	0	4	4	1	1	1	1	1	0	0	2	0	2	0	2	0	2	0	0	0	2	0	0	1	1	154	34	71	1	1	0	2	2
43	1	1	1	6	110	1	2	4	4	3	1	1	2	2	4	4	1	3	5	0	1	2	2	1	1	4	1	2	0	1	2	0	0	2	0	2	0	2	0	2	0	0	0	2	0	0	3	2	150	44	89	1	1	1	2	2
44	2	2	1	2	120	3	2	1	1	2	1	1	2	4	3	3	2	0	5	0	2	3	3	0	2	1	3	2	0	1	1	0	0	2	0	1	1	1	1	1	3	2	3	2	0	1	1	1	165	62	96	1	1	0	2	2
45	2	3	3	1	150	2	2	2	2	5	1	3	4	1	2	2	2	0	2	1	3	3	3	0	1	1	1	1	1	1	3	1	0	2	0	1	1	1	1	1	3	2	2	2	0	0	1	1	165	65	90	3	3	3	2	2
46	1	3	2	3	160	1	2	4	2	1	1	1	2	2	3	3	2	0	5	0	2	3	3	0	1	2	3	1	2	1	3	0	0	2	0	1	2	1	1	2	0	0	0	1	2	0	1	1	158	35	62	1	2	0	1	1
47	3	1	1	2	120	1	2	1	3	1	1	3	4	5	5	2	2	0	2	2	2	1	3	0	1	4	3	2	0	1	4	1	0	2	0	1	1	2	0	2	0	0	0	2	0	2	1	1	140	48	80	3	2	0	2	2
48	2	1	1	2	130	2	2	2	4	1	1	1	2	4	6	4	2	0	1	0	3	3	3	0	4	4	3	2	0	1	4	1	0	2	0	1	2	2	0	2	0	0	0	1	3	0	1	1	145	43	78	3	1	0	1	2
49	2	3	2	5	70	2	2	2	1	1	1	1	2	6	6	3	2	0	2	2	2	1	3	0	2	2	2	2	0	1	4	1	0	2	0	1	2	1	1	1	3	2	1	2	0	0	1	1	166	66	91	3	1	0	2	2
50	1	2	2	1	90	1	2	3	1	5	1	3	4	4	4	4	2	0	5	0	2	3	3	0	2	2	2	2	0	1	0	1	0	2	0	1	4	1	1	1	4	2	2	1	5	1	3	2	159	37	63	3	1	4	1	1
51	1	1	1	2	140	1	1	4	4	1	1	1	2	1	2	2	1	3	2	4	2	3	3	0	2	1	1	1	1	1	1	1	1	2	0	2	0	1	1	2	0	0	0	2	0	0	1	1	160	55	85	2	1	0	2	2
52	2	1	1	3	160	2	1	1	2	2	1	1	2	1	1	0	2	0	5	0	2	2	2	0	2	4	3	2	0	1	2	1	0	2	0	2	0	1	1	1	3	2	1	2	0	0	1	1	165	46	63	1	1	0	2	2
53	3	2	2	2	150	3	1	1	3	3	1	1	2	1	2	2	2	0	5	0	2	2	2	0	4	2	3	2	0	1	2	1	0	2	0	2	0	1	1	1	2	1	0	2	0	2	1	1	145	31	62	1	1	0	2	2
54	1	2	3	2	160	2	1	4	4	2	1	1	3	3	2	3	2	0	5	0	1	2	2	0	5	4	2	1	3	1	1	1	0	1	0	1	1	2	0	2	0	0	0	1	2	0	3	1	172	80	100	3	2	0	1	2
55	2	1	2	1	180	2	1	2	1	4	1	3	4	2	3	4	2	0	5	0	1	3	2	1	1	2	4	2	0	1	3	1	0	2	0	1	2	1	1	1	4	2	1	1	1	0	3	2	149	54	84	3	1	2	1	2
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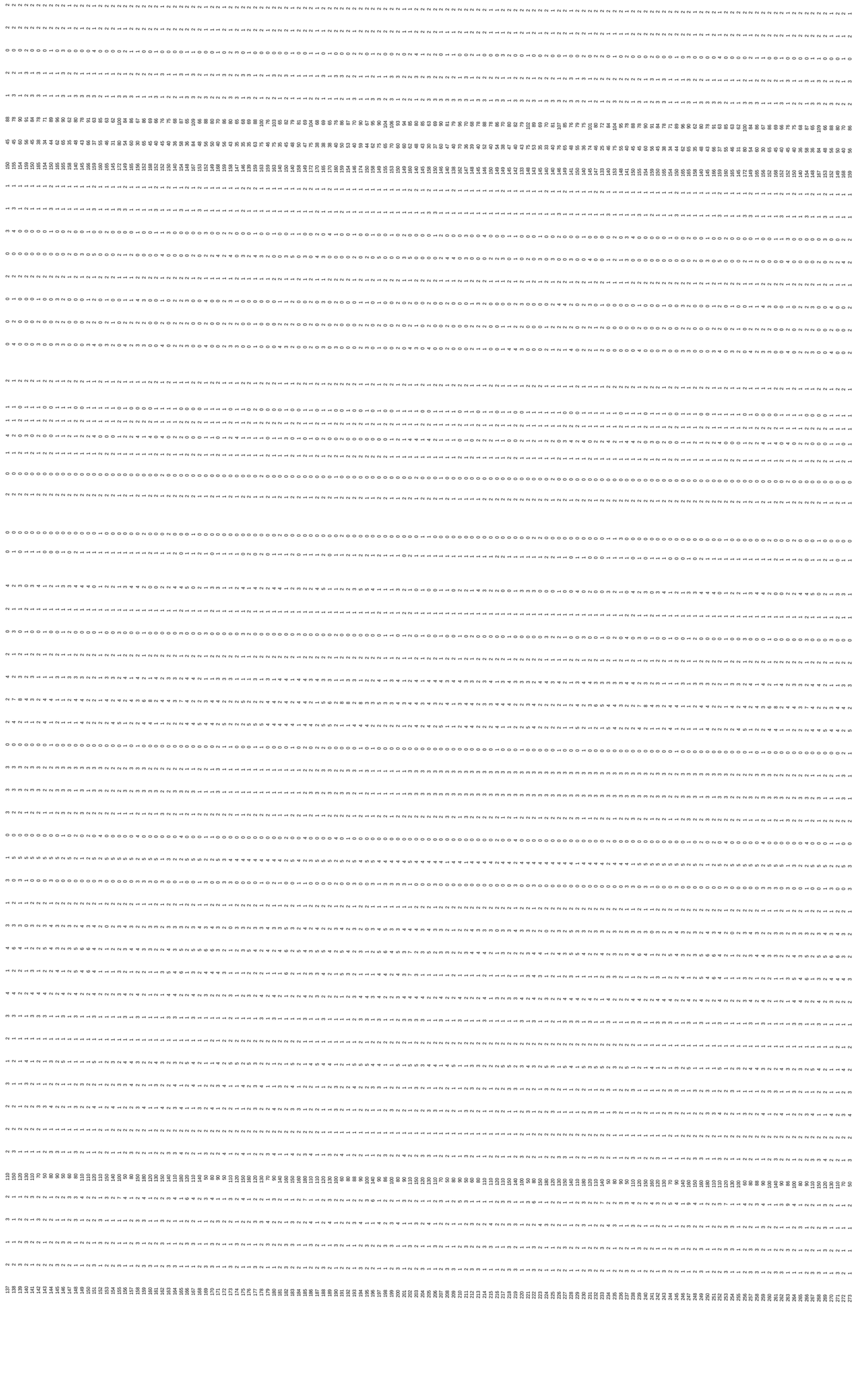

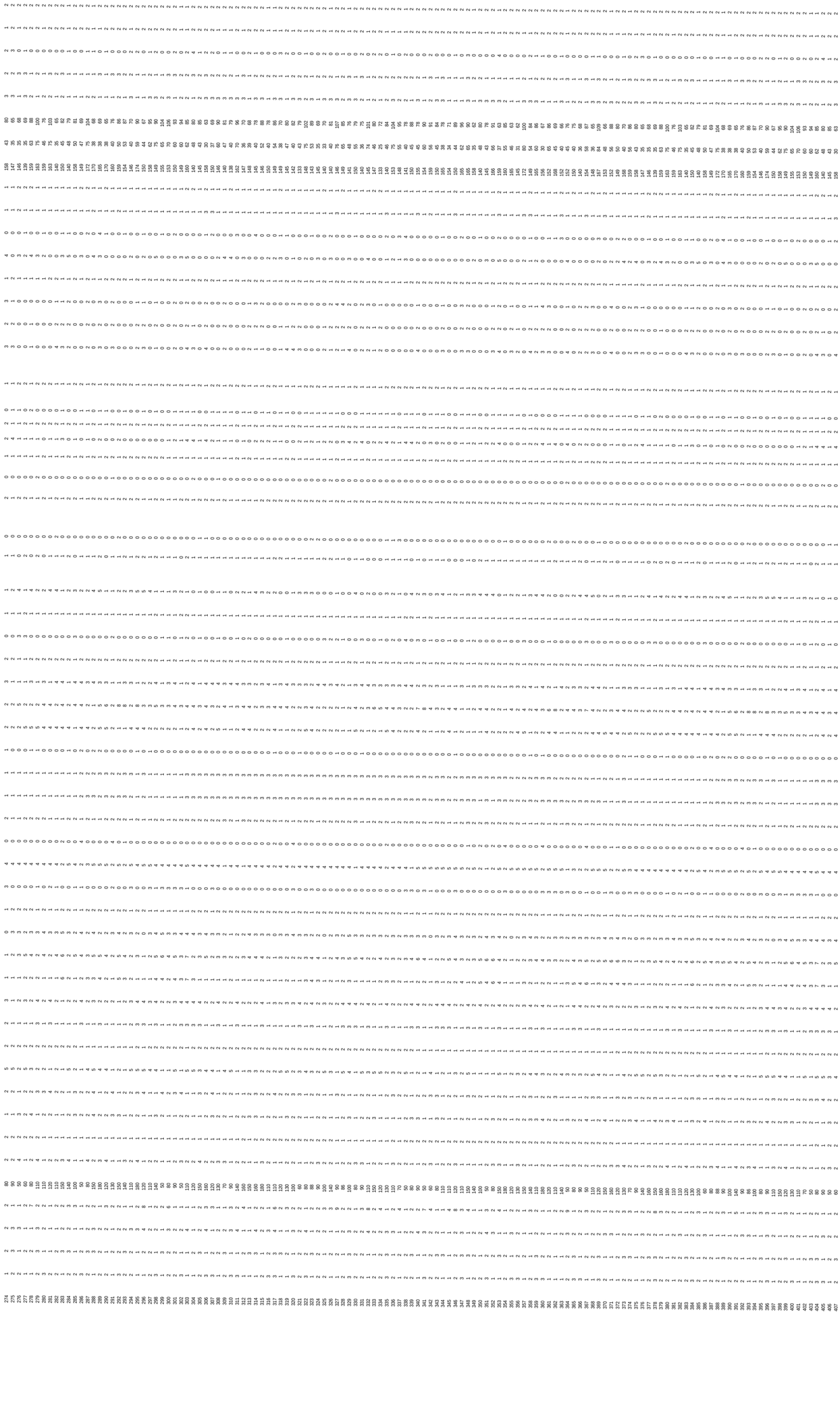

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ANNEXURE- XIII

KEY TO MASTER SHEET

Question no	Label of variables	Values
1	Name of old age home	
2	Management	1. Government 2. Private 3. Trust
3	Type of services	1. Free only 2. Paid only 3. Both
4	Criteria for admission	1. No family members to care 2. Able to pay institutional charges 3. Should be free from diseases 4. Able to take care of self
5.	Maximum inmates	
6.	Present strength	
7.	Members staying in a room/dormitory	1 to 9
8	Average floor space per person	80 to 160 sq ft
9	Source of drinking water	1. Corporation lorry water 2. Corporation pipe water 3. Bore water 4. Hand pump
10	Food supply	1. Vegetarian 2. Mixed diet
11.	Recreational facilities	1. TV 2. Radio 3. News paper 4. Indoor games
12.	Medical service	1. Residential 2. Periodical 3. On call 4. By referral
14.	Age	1. 60- 65 2. 66- 70 3. 71- 75 4. 76- 80 5.>80
15	Sex	1. Male 2. Female
16.	Religion	1. Hindu 2. Christian 3. Muslim

Question no	Label of variables	Values
1	Name of old age home	
17.	Community	1. Forward community 2. Backward community 3.Most backward community 4. Scheduled caste/Scheduled tribes 5. Others
18.	Education	1. Illiterate 2. Primar 3. Middle school 4. High school 5. Higher secondary school 6. Graduation 7. Post graduate
19.	Occupation	1. Unemployed 2. Unskilled 3. Semiskilled 4. Skilled 5. Clerical 6. Semi professional 7. Professional
20.	Previous income	1. <979 2. 980- 2,935 3. 2,936-4,893 4. 4,894-7,322 5. 7,323-9,787 6. 9,788-19,574 7. >19,575
21.	Marital status	1. Unmarrie 2. Married and Spouse alive 3. Married and separated 4. Widow 5. Widower
22.	Spouse details	0 spouse dead 1. In same old age home 2. In some other home 3. With family 4. Not known
23.	Type of family	1. Joint family 2. Nuclear family 3. Lived alone
24.	Smoking	1. Current smokers 2. Ex smoker 3. Non smokers
25.	Alcohol	1. Current alcoholic 2. Ex alcoholic 3. Non alcoholic
26	Other habits	0.no adiction 1. Betel leaves chewing 2. Snuff
27. 1	Hypertension told by doctor	1. Yes 2.No
27.i.A	On medication	1. Yes 2.No
27.B	Years on treatment	0 no HT, 1. Less than 3 year 2. 3 – 6 year 3. 6 – 9 year 4. More than 9 year
27.C	Medication Regular	1. Yes 2.No
27.ii	Reasons	1. No physician in the home 2. Non availability of drugs 3. Non availability of attenders

Question no	Label of variables	Values
1	Name of old age home	
		4. Distance
27.2	Health check up	0.no HT 1. Once in 15 days 2. Once in a month 3. Once in 3 - 6 months 4. More than 6 months
27.3	complications	1. Yes 2.No
27.4	Family history	1. Yes 2.No 3. don't know
28. 1	Diabetes told by doctor	1. Yes 2.No
28.i.A	On medication	1. Yes 2.No
28.B	Years on treatment	0 no DM, 1. Less than 3 year 2. 3 – 6 year 3. 6 – 9 year 4. More than 9 year
28.C	Medication Regular	1. Yes 2.No
28.ii	Reasons	1. No physician in the home 2. Non availability of drugs 3. Non availability of attenders 4. Distance
28.2	Health check up	0.no DM 1. Once in 15 days 2. Once in a month 3. Once in 3 - 6 months 4. More than 6 months
28.3	complications	1. Yes 2.No
28.4	Family history	1. Yes 2.No 3. don't know
29.1	Seeing difficulty	1. Yes 2.No
29.1.i	Duration	1. Less than 1 year 2. 1- 2 year 3. 2 - 3 year 4. More than 3 year
29.2	consulted Eye specialist	1. Yes 2. No
29.2.i	reasons	1. Distance 2. No money to pay 3. Non availability of attenders 4. Satisfied with the vision they had
29.3	Cataract surgery	1. Yes 2.No
29.3.i	frequency of eye checks up	1. Once in 3 months 2. Once in 6 months 3. Once in a year 4. No Eye check up
30.1	joint pain	1. Yes 2.No
30.2	joint swelling	1. Yes 2.No
30.3	restriction of movement	1. Yes 2.No

Question no	Label of variables	Values
1	Name of old age home	
30.4.i	treatment	1. Yes 2.No
30.4.ii	reasons	1. Difficulty in walking 2. Non availability of attenders 3. Distance 4. Non availability of medicines 5. Not useful.
31.1	Hearing difficulty	1. Yes 2.No
31.A	hearing aid	1. Yes 2.No
31.2	the reasons	.1. Not available 2. Expensive 3. Not useful 4. Not aware about hearing aid
32.	Depression	0 normal, 1.mild, 2 moderate 3. severe
33.	Admission in old age home	1. Self 2. Family members 3. Friends 4. Neighborhood 5. Help Age India
34.	Reason for Institutionalization	1. Economic insufficiency 2. Health problems 3. Didn't want to be a hindrance for the family members 4. No family members alive to take care 5. Neglect by family members 6. Children living in another place 7. Abuse by family members
35.	Duration of stay	1. Less than 6 month 2. 6 month - 1 year 3. 1 year - 5 year 4. More than 5 year
36.	Current income	1. Yes 2. No
37.	Source	1. Retirement pension 2. Old age pension 3. From family members
38.	Financial dependency	1. Yes 2. No
39.	Family contacts	1. Yes 2. No
39.A	How often	1.Monthly once 2. 1 – 3 months 3. 3 – 6 months 4. > 6 months
40.	Leisure time activities	1. Television 2. Radio 3. News paper 4. Maintenance work 5. Prayer 6. No leisure time activity
41.	Activities of daily living	0. independent 1 .partially

Question no	Label of variables	Values
1	Name of old age home	
		dependent 2. fully dependent
42.	Utilization of health services	1. Yes 2. No
42.i.	type of health services	1. Old age home doctor 2. Private 3. Government 4. Others
42.ii	Reason for non utilization	1. Distance 2. No money to pay 3. Non availability of attendants 4. Inability to walk
43.	Know any benefits	1. Yes 2. No
43.i	Get any benefits	1. Yes 2. No
43.A	What benefits	1.old age pension

INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI -3

Telephone No : 044 25305301
Fax : 044 25363970

CERTIFICATE OF APPROVAL

To
Dr. D. Jaiganesh
PG in MD Community Medicine
Madras Medical College, Chennai -3

Dear Dr. D. Jaiganesh

The Institutional Ethics committee of Madras Medical College, reviewed and discussed your application for approval of the proposal entitled "A cross sectional study on the Prevalence of Health problems among inmates of Old Age Homes in North Zone of Chennai -2012" No.12082012.

The following members of Ethics Committee were present in the meeting held on 10/08/2012 conducted at Madras Medical College, Chennai -3.

1. Dr. S.K. Rajan. M.D.,FRCP.,DSc	-- Chairperson
2. Prof. Pregna B. Dolia MD Vice Principal, Madras Medical College, Chennai -3 Director , Institute of Biochemistry, MMC, Ch-3	-- Member Secretary
3. Prof. B. Vasanthi MD Prof of Pharmacology ,MMC, Ch-3	-- Member
4. Prof. C. Rajendiran, MD Director , Inst. Of Internal Medicine, MMC, Ch-3	-- Member
5. Prof. S. Deivanayagam MS Prof of Surgery, MMC, Ch-3	-- Member
6. Thiru. S. Govindsamy. BABL	-- Lawyer
7. Tmt. Arnold Soulina MA MSW	-- Social Scientist

We approve the proposal to be conducted in its presented form.

Sd/ Chairman & Other Members

The Institutional Ethics Committee expects to be informed about the progress of the study, and SAE occurring in the course of the study, any changes in the protocol and patients information / informed consent and asks to be provided a copy of the final report.

Member Secretary, Ethics Committee